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RECURRING MOTIVES AND THEMES AS A MEANS TO UNITY IN SELECTED STRING QUARTETS OF DMITRI SHOSTAKOVICH

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RECURRING MOTIVES AND THEMES AS A MEANS TO

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A. D. S.

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Chapter 1

INTRODUCTION

After the Russian Revolution, despite the urging of extreme revolutionaries on the one side and extreme conservatives on the other, moderation in the form of adherence to Western classic traditions prevailed in the Arts in the Soviet Union. Both the revolutionaries and the conservatives would have destroyed all associations with the bourgeois culture of Western Europe. While the former proposed that only the most extreme avant-garde experimentalism was worthy of the new socialist state, the conservatives supported only folk art. Lenin possessed a great love for the music of Beethoven; Stalin's nationalism deified Glinka, Tchaikovsky, and Rimsky-Korsakov. Given the immense political power of both Lenin and Stalin it was not difficult for them to propagate their personal artistic philosophies. Thus a continuity of conservative musical tradition was preserved in the Soviet Union in the first half of the twentieth century.

Shostakovich, born in 1906, was thoroughly schooled in the disciplines of nineteenth century Western art music at the St. Petersburg Conservatory. The three men who guided the young composer's studies were traditionalists: Glazunov, the conservatory director; Steinberg, theory and composition instructor; and Nikolaiev, piano teacher. Given this educational background and the political climate of his homeland, it is not surprising that Shostakovich should have developed as one of the traditionalist composers of the mid-twentieth century.

After the death of Sergei Prokofiev in 1953 and until his own demise on August 9, 1975, Dmitri Shostakovich was internationally esteemed as the dean of Soviet composers. Austin, for example, called him "the representative Soviet Artist."[1] The Soviet government periodically recognized Shostakovich's preeminence by awarding him various titles and offices. In 1954 he was named People's Artist of the USSR; he was awarded the Order of Lenin in 1956, and in 1966 he became chairman of the Composer's Union of the USSR. Shostakovich was also awarded honorary degrees from Oxford University and the University of Dublin. An honorary Doctor of Fine Arts degree was conferred upon the composer by Northwestern University at Evanston, Illinois in June of 1973.

While many of the composer's compositions are widely performed throughout the world, the string quartets have suffered an undeserved

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[1]William W. Austin, Music in the 20th Century (New York: W. W. Norton and Co., 1966), p. 432 (writer's emphasis).

neglect as noted by three writers of related literature.[2,3,4] It is hoped that this study of unifying factors among the linear materials of quartets seven, eight, nine, and ten will increase an awareness of and stimulate an interest in these compositions as worthy additions to the repertory of twentieth century chamber music.

By the time Shostakovich turned his attention to the problems of the string quartet genre at the age of 32, his international reputation was well established by the first five symphonies, the Golden Age Ballet, the Twenty-Four Preludes for Piano, the First Piano Concerto, and two operas: The Nose and Lady Macbeth of Mtsensk. Only three chamber works were composed before the Quartet No. 1, opus 49 (1938). Two of these are compositions from the composer's conservatory days: opus 8, Trio for Piano, Violin, and Cello (1923); and opus 11, Prelude and Scherzo for String Octet (1924). The third chamber composition which antedates the first quartet is the opus 40, Sonata for Cello and Piano composed in 1934.

Six years separate the Quartet No. 2, opus 68 (1944) from the first quartet. However, from 1944 until his death the composer returned every two to four years to the challenge of the string quartet genre.

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[2]Norman Kay, Shostakovich (London: Oxford University Press, 1971), p. 63.

[3]Hans Keller, "Shostakovich's Twelfth Quartet," Tempo, LXLIV (1970), 4.

[4]Colin Mason, "Editorial," Tempo, LXLIV (1970), 1.

Purpose and Limitations of the Study

The study was concerned with the recurrences of motives and themes as a means to structural unity in selected string quartets of Dmitri Shostakovich. The broad based purpose of the study was to develop a construct of the use of recurring motives and themes as a means to structural unity in these quartets.

The primary thrust of this investigation was directed toward linear aspects of specific motives and themes, their contrapuntal manipulation, growth, variation, and transformation within and among movements of these selected quartets. Tonality and formal structure were considered whenever they had a special or specific relationship to recurring motives or themes, as for example when the tonality of a section, a movement, or a complete quartet appeared to revolve around the pitches of a basic motive.

The study was limited to quartets seven, eight, nine and ten. Each article reviewed in the literature treating the Shostakovich string quartets[5] suggested, either by inference or by a positive statement, the need for analytical studies dealing in depth with these compositions. Additionally it was noted that the authors called attention to various motivic and thematic similarities between and among these quartets. One or more of the quartets from number seven through number ten were selected for special commentary by every author. O'Loughlin observed that Shostakovich seemed to have become absorbed in an intense preoccu-

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[5]See Chapter 2: Review of Related Literature.

pation with motivic unity in the later quartets. Considered together these comments suggested that a detailed linear analysis of quartets seven through ten could yield information concerning the extent, the nature and the techniques of motivic unity in these compositions from the composer's maturity.

The composition dates of quartets seven, eight, nine, and ten showed that they were composed within the span of four years. The Quartet No. 7, (opus 108) and the Quartet No. 8, (opus 110) were composed in 1960; the Quartet No. 9, (opus 117) and the Quartet No. 10, (opus 118) were completed in 1964. None of the remaining ten quartets show so few compositions completed between their respective opus numbers. Only two compositions of major importance in the composer's creative file interrupted his concentration upon the quartet medium during these four years: the Symphony No. 12, opus 112 (1961) and the Symphony No. 13, opus 113 (1962).

The related literature indicated that these four quartets were ideal subjects for a linear analysis. The close temporal relationship of these compositions made them a logical choice as subjects of a search for subtle changes in the composer's approach to motivic manipulation while he was at the height of his creative life.

The opus numbers and composition dates of the fourteen quartets are:

#1 - opus 49 in C - 1938	#5 - opus 92 in B - 1951
#2 -*opus 68 in A - 1944	#6 - opus 101 in G - 1956
#3 - opus 73 in F - 1946	#7 - opus 108 in f# - 1960
#4 - opus 83 in D - 1949	#8 - opus 110 in c - 1960

#9 - opus 117 in E^b - 1964 #12 - opus 133 in D^b - 1968

#10 - opus 118 in A^b - 1964 #13 - opus 138 in b^b - 1970

#11 - opus 122 in f - 1966 #14 - opus - 1973[6]

*This opus number is variously given as 68 or 69. Martynov gives the opus number as 69, assigning the number 68 to the music for the film "Zoya." Kay also assigns the opus 69 designation to the second quartet. The published score assigns the opus number 68.

Assumptions

As Beardsley postulates, the inner logic of a structure or style is in proportion to the degree of unity therein.[7] In undertaking a study of this nature, the writer assumed that structural unity was an important feature of the compositional style of any recognized composer. It was further assumed that Shostakovich, by virtue of the international reputation gained for him by his music, was a composer of recognized ability.

The preliminary investigation strengthened the writer's conviction that these compositions were worthy of detailed study and that recurring motives and themes were an important means to structural unity in quartets seven, eight, nine, and ten.

Justification of the Study

One of the principal goals of research is to offer new knowledge or to provide a new perspective against which to evaluate knowledge

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[6]Royal S. Brown, "An Interview with Shostakovich," High Fidelity Magazine, XXIII (October, 1973), 86-89. The composer is quoted as saying, "My most recent work is my Fourteenth String Quartet, which was quite a large project." Shostakovich does not mention an opus number.

[7]Monroe C. Beardsley, Aesthetics: Problems in the Philosophy of Criticism (New York: Harcourt, Brace and World, 1958), pp. 462-66.

already accumulated. This is no less true of the Arts than of the Sciences. Specialists in the various areas of music each have individual contributions to make, and among those made by the music theorist is the isolation, identification, and analysis of linear elements to determine how this material is used in compositions of any period or composer.

The preliminary investigation suggested that a detailed study would contribute to general knowledge of twentieth century music, would contribute insight into the string quartets of Shostakovich which could be of value to performers seeking to make knowledgeable decisions in their expression of the composer's musical intent, would contribute information about the content and organization of these quartets which many theorists and educators had agreed was necessary for the fullest understanding and enjoyment of our art, and would encourage pedagogical attention to the thematic process in composition.

Definition of Terms

Motive. The term motive as used in the study refers to a specific order of pitches which assumes an important linear role in the compositional process by means of literal recurrence, sequential treatment, contrapuntal manipulation, growth and mutation throughout a composition, movement, or section.[8]

Theme. The term theme as used in the study refers to a complete musical thought which is at least a phrase in length.

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[8]The term figure has been used by some writers to refer to a group of pitches fewer than a motive. Many writers have preferred to use figure in the sense of an "accompanimental figure," while still others have used figure as synonymous with motive. In order to avoid confusion when dealing with a portion of an original motive, this study uses the terms motive fragment and fragmentation.

Basic Contour. The term basic contour is used in the study to describe the directional tendencies of a line.

Vary. The term vary as used in the study is a process of motive or theme alteration wherein one or more elements is manipulated in such a way that the original musical idea may still be determined visually and aurally.

Transform. The term transform as used in the study is a process which results in a motive or theme which seems to be new in appearance or character, though derived from the same essence and kernel as a previous motive of theme.[9]

Indirect Affinity. The term indirect affinity as used in the study refers to the forming of a third contour from portions of two or more previous contours.[10]

Extension. The term extension as used in the study means that the motive or theme has been lengthened.

Filling. The term filling as used in the study refers to the technique of adding a large number of pitches to the original contour causing a considerable expansion of the basic shape.

Thinning. The term thinning as used in the study refers to the technique of subtracting a large number of pitches from the original contour causing a considerable contraction of the basic shape.

Repeat and Sequence. The terms repeat and sequence as used in the study refer to reproductions of complete or nearly complete motives.

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[9]Rudolph Reti, The Thematic Process in Music (London: Faber and Faber, 1961), p. 61.

[10]Ibid., p. 240.

A reproduction at the same pitch level or by octave displacement is labeled as a repeat whereas the term sequence is applied when the pitch level is other than the same or an octave displacement.

Permutation. The term permutation as used in the study refers to a change in the order of the original pitches or a change in the expected pitch order of a transposition of the original contour.

Pedal. The term pedal as used in the study refers to a pitch which may be consonant or dissonant with the vertical sounds around it and which is sustained or repeated long enough to give a sense of anchoring during changes of vertical sound. A trill which is thus sustained is considered as a two note pedal.

Anticipation. The term anticipation as used in the study is a preparatory process which looks forward to a coming musical event. Any parameter of the coming event may be involved, for example: tonal center, pitch frame, meter, rhythm, texture, or timbre. Anticipation generally takes place immediately before or in close proximity to the prepared event.

Emergence. The term emergence as used in the study is a metamorphic process during which a certain musical event grows in aural impact until it rises to claim primary aural attention. The event is generally a motive or theme which is structurally significant at its point of high aural impact and whose growth process may be viewed in retrospect as having pervaded a composition or at the very least to be operative in non-adjacent movements.

Chapter 2

REVIEW OF RELATED LITERATURE

Literature related to the study may be divided into three major areas: that literature which provides historical background on Shostakovich and Soviet music in general, as well as insights into the composer's compositional style; that which provides information concerning motive and thematic unity, and their potential for use as unifying factors in composition; and, literature concerning the string quartets of Shostakovich, which provides sources of evidence concerning the recurrence of themes and motives in some of the quartets.

Historical Literature

Dmitry Shostakovich: Composer by Rabinovich[1] is the most recent English language biography of the composer. The fact that Shostakovich has composed more than half of his quartets since Rabinovich's publication date suggests that a need exists for an updated compilation of biographical material.

Especially notable in this biography is a concentration on

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[1]Dmitri Rabinovich, Dmitry Shostakovich: Composer (London: Lawrence and Wisehart, 1959).

philosophical justifications instead of technical analyses. Rabinovich is largely uncritical except where the official view of the Soviet government of the 1950's is being advanced, as for example his pages concerning Lady Macbeth and the Symphony No. 4. In his desire to show Shostakovich as a "true Soviet artist," Rabinovich comes close to reducing the composer to a musical pamphleteer who avidly expresses ideological complexities in every musical phrase. Although Rabinovich is brief, his biographical material appears to be trustworthy.

Shostakovich: The Man and His Works by Martynov[2] and Dmitri Shostakovich: The Life and Background of a Soviet Composer by Seroff,[3] both useful as biographical sources at one time, are hopelessly out-of-date. Martynov's non-technical commentary on the composer's compositions through the Symphony No. 9, (opus 70) is interesting chiefly from the point of view of Russian-Soviet esthetics. The first quartet is compared to the finest pages of Schubert[4] and is selected as among the best and most important works of Soviet chamber music,[5] while the second quartet is placed among the composer's finest creations.[6]

The Seroff biography was written in collaboration with Shostakovich's aunt, Nadejda Galli-Shchat. It contains many intimate details of the composer's boyhood and youth and appears to be a

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[2]Ivan Martynov, Shostakovich: The Man and His Works, translated by T. Guralsky (New York: The Philosophical Library, Inc., 1947).

[3]Victor Seroff, Dmitri Shostakovich: The Life and Background of a Soviet Composer (New York: Alfred A. Knopf, 1943).

[4]Martynov, pp. 73-75.

[5]Martynov, p. 100.

[6]Martynov, p. 143.

reliable source for early biographical material. Concerning technical aspects of the composer's music, Seroff is of even less assistance than Martynov.

Shostakovich by Kay,[7] which was cited in chapter one, is a collection of thoughtful comments and evaluations concerning the evolution of the composer's personal style as displayed in his music. All of the major compositions are discussed, including the twelfth quartet and the fourteenth symphony.

The series of articles written by Shostakovich for Music Journal during the 1960's furnishes insights into his thoughts on the relationship of the composer and his music to the public. The four articles cited in the bibliography of this study comprise approximately half of the total series, and they were selected by this writer for their apparent sincerity and lack of rhetoric. The complete series of articles is available in a paperback reprint entitled The Power of Music.[8]

Music and Musical Life in Soviet Russia: 1917-1970 by Schwarz[9] is a comprehensive overview of fifty years of Russian musical history. This is the most valuable narrative of musical life in the Soviet Union published to date; it is an indispensable source for an understanding of the social and artistic environment in which the talent of Shostakovich developed.

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[7]Norman Kay, Shostakovich (London: Oxford University Press, 1971).

[8]Dmitri Shostakovich, The Power of Music (New York: Music Journal, 1968).

[9]Boris Schwarz, Music and Musical Life in Soviet Russia, 1917-1970 (New York: W. W. Norton and Co., 1972).

In Soviet Composers and the Development of Soviet Music, Krebs[10] has placed his major emphasis upon an examination of the lives and compositions of a group of Soviet composers working during the first half of the twentieth century. Kreb's musical criticism is most often non-technical, 'program-note' analysis. The chapter discussing Shostakovich is a particular disappointment, for the most recent composition discussed is the eleventh symphony composed in 1957.

Abraham's Eight Soviet Composers[11] contain brief, uncritical sketches of the following eight composers: Dzerzhinsky, Kabalevsky, Khachaturyan, Knipper, Prokofiev, Shaporin, Shebalin, and Shostakovich.

A History of Russian Music by Leonard,[12] A History of Russian-Soviet Music by Bakst,[13] and Russian Music from the Beginning of the Nineteenth Century by Asafiev[14] are all useful sources for general background material on Russian Music of the nineteenth and the first half of the twentieth century.

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[10]Stanley Dale Krebs, Soviet Composers and the Development of Soviet Music (New York: W. W. Norton and Co., 1970).

[11]Gerald Abraham, Eight Soviet Composers (London: Oxford University Press, 1943).

[12]Richard A. Leonard, A History of Russian Music (New York: Macmillan Co., 1957).

[13]James Bakst, A History of Russian-Soviet Music (New York: Dodd, Mead and Co., 1966).

[14]Boris Vladimirovich Asafiev, Russian Music from the Beginning of the Nineteenth Century (Ann Arbor: Edwards, 1953).

Literature Concerning Motive and Thematic Unity

The Thematic Process in Music by Reti[15] is the most important contribution to the study of the role of motives and themes as compositional devices, and specifically as unifying factors within and among movements of a single composition. Reti does not propose that his idea of the thematic process constitutes an entirely new theory. He does, however, suggest that the study of the thematic process in music should be pursued by musicians as a theoretical discipline of equal importance with the traditional disciplines of harmony, counterpoint and musical form.[16]

Reti, through an abundance of musical examples, develops his theory " . . . that in the great works of musical literature, the different movements of a composition are connected in thematic unity--a unity that is brought about not merely by a vague affinity of mood but by forming the themes from one identical musical substance."[17]

The procedure of thematic transformation involves the production of a theme which is seemingly new in appearance and character, though derived from the same essence and kernel as a previous theme. Reti further claims that the master of transformation must endeavor not to emphasize the transformation source, but skillfully to conceal it. He states:

> . . . a thematic transformation must be regarded as most impressive from a structural angle if the identity is rooted strongly and firmly in the depths of the shapes in question and at the same time is as inconspicuous and little traceable as possible on the surface.[18]

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[15]Rudolph Reti, The Thematic Process in Music (London: Faber and Faber, 1961).

[16]Reti, pp. 3-4. [17]Reti, p. 4 [18]Reti, p. 58.

It is Reti's claim that musicians during the first half of the twentieth century were too preoccupied with the schematic formulae of our familiar theoretical classifications of form (i.e., binary, ternary, rondo, etc.) which are only the outward shape of a musical composition. His logical conclusion follows:

> . . . if these simple methods of grouping really comprised the whole phenomenon of musical form, one could take at random five groups from five different pieces, fit them into close key relationship, and thus forge them into one "work" . . . this could yield only an absurd result.
>
> Therefore, there must still be some other essential qualities . . . these necessary qualities are none other than the thematic and motivic affinities.[19]

Reti claims that truly unrelated shaping is virtually unknown in great compositional literature. Those composers of the past whom we consider today as "great" have all been aware of the central role of thematic relationships in the compositional process. Although Reti's analyses range from Dufay to Debussy and Richard Strauss, his numerous and persuasive examples are culled predominately from nineteenth century composers. The fact that Reti's terminology finds easy application to the techniques of motivic manipulation as observed in the Shostakovich quartets is but one indication of the composer's deep roots in the compositional techniques of nineteenth century Western European music.

Reti felt that composers at the turn of the century were preoccupied with the elements of tonality and orchestral color; they thus neglected to cultivate thematic unification as a basis of architectonic organization. With the loss of thematic unification as a conscious

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[19]Reti, p. 111.

systematic compositional force, twentieth century composers lost a powerful form-building tool. Writing at the mid-point of our century, Reti felt that composers were awakening to the necessity of a return to thematic thinking. He saw this tendency to resume ancient patterns as highly significant and suggested that Schoenberg and his school were leaders in this return. Reti proposed that " . . . the so-called 'twelve-tone' music, reveals a vehement desire to lead music back to a thematic concept."[20]

Toch in The Shaping Forces in Music[21] emphasizes the importance of motive in musical composition. Toch views the growth of musical narration by motivic treatment as being divided into two categories: "perpetuation of one motif and accumulation of various motifs."[22] He further states:

> It is the rhythmical recurrence of a motivic pattern that provides the unifying undercurrent of sections, at least, if not of whole movements.[23]

Imitation, variation, and repetition of various motives keeps growth and development alive by alternate emergence and submergence of motives. Motive survives and gives life by repetition, literal or varied, and constant transformation. Toch states that motivic treatment may form a constant undercurrent of movement (e.g., the first movement of Brahm's second symphony) or it may constitute the main voice throughout a composition (e.g., the first movement of Beethoven's sixth symphony).[24]

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[20]Reti, p. 347.

[21]Ernst Toch, The Shaping Forces in Music (New York: Criterion Music Corp., 1948).

[22]Toch, p. 196 [23]Toch, p. 197 [24]Toch, pp. 201-16.

Newman in Understanding Music[25] defines motive as "an idea that is incomplete, yet of primary interest by virtue of a characteristic pitch contour, rhythmic pattern, or harmonic implication. Motives often consist of no more than four notes . . ."[26] Newman then suggests that a motive, when it is of primary interest in a compositional style, tends to be the chief means of unity; it thus makes a greater impression on the memory than any other element. Furthermore, since it is incomplete, a motive must constantly renew itself through changes of range, scale degree, metric position, timbre, intensity, tempo, and changes of "the motive's very structure, provided the motive remains recognizable."[27]

Newman thoughtfully points out that composers of different historical eras have caused the motive to grow in quite different manners. The extent to which a motive retains its original integrity may provide a clue to stylistic changes. On the use of motive in modern music, Newman says:

> The motive often undergoes what has been aptly termed "the organic growth of a germ idea"--frequently several such growths, as though every ramification of the idea were to be explored.[28]

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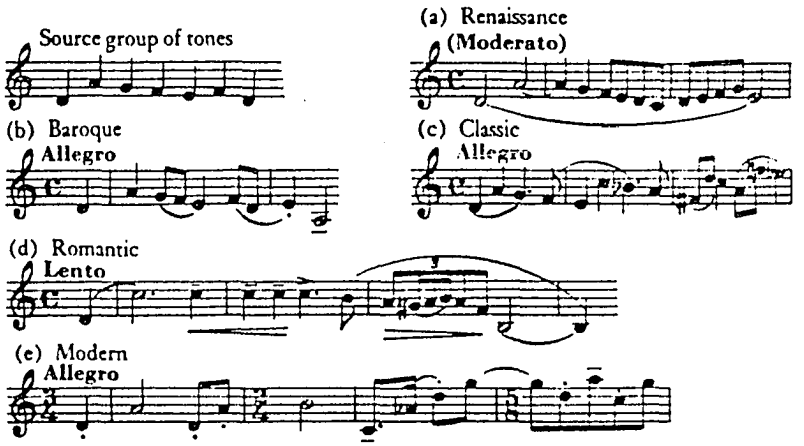
[25]William S. Newman, Understanding Music (2d ed., New York: Harper and Row, 1961).

[26]Newman, p. 139. [27]Newman, p. 140. [28]Newman, p. 143.

Newman's discussion is concluded with an interesting graphic presentation.[29]



How the same motive might have been treated in different eras

Reed takes note of certain typical motive-types which he claims are characteristic of the music of Haydn.[30] He designates these motive-types as primary, secondary, introductory, and rhythmic.[31] The primary motive appears generally at the beginning of a movement or section and serves as the germinal motive for further extension and transformation. The secondary motive is shorter than the primary motive and is not prominently used in the movement or section. The introductory motive appears at the very beginning of a composition and of sections as well; unlike the primary motive, it does not provide material for further exploitation. In Reed's study, rhythmic motive provides

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[29]Newman, p. 147.

[30]Carl Reed, "Motivic Unity in Selected Keyboard Sonatas and String Quartets of Joseph Haydn," (unpublished doctoral dissertation, University of Washington, 1966).

[31]Reed, pp. 23-25.

unity by its repetition throughout a movement or section. Reed stresses flexibility as an important characteristic of any worthy motive.

Perhaps Reed's most thoughtful contribution is made in the area of terminology used in the sonata-allegro form. He suggests "unimotivic sonata" as a replacement term for monothematic sonata to identify forms which utilize similar thematic or melodic material in their thematic areas. As he suggests, "unimotivic" does emphasize the unifying effect of basic motives and is perhaps often more accurate and flexible than monothematic.[32]

Farlow's "Thematic Unity in Selected Non-programmatic Symphonies of the 19th Century"[33] is an analysis of twenty-four symphonies by five nineteenth century composers. Farlow attempts to isolate, categorize, and describe the unifying effects of various types of cyclic ideas. Although no general practice of cyclical unity was found, Farlow concluded that the amount of cyclical unity in a composition was directly related to the subtlety of the unifying idea and its potential for effective incorporation into as many movements as possible. She found far more use of organic motives than any other type of cyclic idea, thus suggesting that it is at the motivic level that the most subtle unification occurs.

In "An Investigation of the Analytical Techniques Used by

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[32]Reed, p. 174.

[33]Betsy Clifford Farlow, "Thematic Unity in Selected Non-programmatic Symphonies of the 19th Century," (unpublished doctoral dissertation, University of North Carolina, 1959).

Rudolph Reti in The Thematic Process in Music,"[34] Schwejda shows Reti's thematic process to be allied to the principles of serial composition. Schwejda suggests that if the user of Reti's method will avoid intuitive and esthetic judgments, the method should be valuable as an analytical tool.

Phelps in A Guide to Research in Music Education[35] calls the study of thematic relationships and transformations an important branch of form analysis. In searching for hidden thematic relationships which exist in certain compositions, Phelps encourages the analyst to make use of Reti's ideas of the thematic process.

Laney in "Thematic Material and Developmental Techniques in Selected Contemporary Compositions"[36] investigates thematic development in ten contemporary compositions. Laney found Reti's idea of the thematic process to be a useful tool in his analysis.

In "The Process of Multivalent Thematic Transformation," Reale[37] investigates the manipulation of themes and motives in the compositional process. The concept of transformation is developed on three levels by Reale: the growth of a theme from motives and figures,

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[34]Donald Martin Schwejda, "An Investigation of the Analytical Techniques Used by Rudolph Reti in The Thematic Process in Music," (unpublished doctoral dissertation, Indiana University, 1967).

[35]Roger R. Phelps, A Guide to Research in Music Education (Dubuque, Iowa: Wm. D. Brown, 1969), p. 170.

[36]Maurice Laney, "Thematic Material and Development Techniques in Selected Contemporary Compositions," (Unpublished doctoral dissertation, Indiana University, 1964).

[37]Paul Vincent Reale, "The Process of Multivalent Thematic Transformation," (unpublished doctoral dissertation, University of Pennsylvania, 1950).

the development of a complete theme as it moves aurally and visually throughout a composition, and the transformation of one theme into another either within or among different movements.

Literature Concerning the String Quartets of Shostakovich

There is a paucity of literature on the string quartets of Shostakovich. Mason has lamented their general neglect by performers and the concert-going public.[38] Mason suggests that Shostakovich is an able successor to the mantle of Beethoven; the quartets of Shostakovich are worthy of joining those of Bartok as favorites of the concert-going public. Mason's evaluation of the twelfth quartet is made clear by the following quotation:

> Such a work as the Twelfth Quartet can hardly fail to stimulate renewed interest in the reappraisal of Shostakovich's entire string quartet output, which it so magnificently crowns, . . .[39]

In another article, Mason points to form as one of the most interesting aspects of Shostakovich's music.[40] Mason ventures that a study of form in the quartets could be an important contribution to a discussion of contemporary music. Attention is drawn to some features of thematic unification found among the quartets. In his short survey, Mason finds in the quartets "such subtleties of design as to suggest that they would handsomely repay a deep and close analysis."[41] He

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[38]Colin Mason, "Editorial," Tempo, LXLIV (1970), p. 1.

[39]Mason, "Editorial," p. 1

[40]Colin Mason, "Form in Shostakovich's Quartets," Musical Times, CIII (1962), 531-33.

[41]Mason, "Form," p. 531.

claims numerous thematic affinities "in the Retian sense" for the three movements of the fifth quartet, while the seventh and eighth quartets "have close and more persistent thematic relationships than those of any of the earlier quartets."[42]

Keldysh's brief article deals primarily with the eighth quartet which he finds to be basically monothematic.[43] "We can regard the five-movement work as a series of variations on this basic theme, announced at the outset."[44] In the opening motive, the pitches d-e^{b}-c-b are the German equivalent of the composer's signature D-S-C-H.

O'Loughlin's article[45] covers the first eleven quartets. "Gradual mastery of form in general and unity in particular is one of the notable features of these works."[46] O'Loughlin alludes to thematic connections between movements of the earlier quartets, but he also states that "from the Quartet No. 5 onwards, thematic integration seems to have become almost an obsession in the composer's mind."[47] O'Loughlin specifically selects quartets two, five, eight, and ten as major achievements "worthy to stand among the great quartets of the Twentieth Century."[48]

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[42]Mason, "Form," p. 532.

[43]Yury Keldysh, "An Autobiographical Quartet," Musical Times, CII (1961), 226-28).

[44]Keldysh, p. 226.

[45]Niall O'Loughlin, "Shostakovich's String Quartets," Tempo, LXXXVII (1969), 9-16.

[46]O'Loughlin, p. 9.

[47]O'Loughlin, p. 13.

[48]O'Loughlin, p. 16.

Walsh calls the quartets intimately personal compositions which document the development of Shostakovich's style; they focus "an important light on the elements which have helped forge that style."[49] Walsh views quartets eight, nine, ten, and eleven as "notable for their economy--textural, thematic and argumentative"[50] and calls attention to cyclic influences in their forms.

In Cobbett's, Martynov[51] has provided brief, uncritical paragraphs dealing with the quartets one through eight. Martynov writes of Shostakovich's sensitivity to the requirements of the string quartet medium and judges the fifth quartet to be the finest of the eight. Martynov also notes certain thematic links within and between quartets seven and eight.

Keller in "Shostakovich's Twelfth Quartet,"[52] argues logically for the possible influence of Schoenberg's First Chamber Symphony on the Shostakovich twelfth quartet. Keller also suggests that a knowledge of the Russian philosophy of esthetics, with regard to the element of repetition, will repay the Westerner with increased understanding and appreciation of Russian endeavors in all the arts. The following quotation underlines Keller's emphasis on the importance of repetition

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[49]Stephen Walsh, "D-S-C-H and His String Quartets," Music and Musicians, XVII (September, 1968), 18.

[50]Walsh, p. 18.

[51]Ivan Martynov, "Soviet Chamber Music," Cyclopedic Survey of Chamber Music, ed. W. W. Cobbett (2d ed.; London: Oxford University Press, 1963), III, 142-49.

[52]Hans Keller, "Shostakovich's Twelfth Quartet," Tempo, XCIV (Autumn, 1970), 6-15.

as an elcment in Russian art:

> The Russian love of repetition, the ability to make repetition meaningful, must be very deep-seated in the group character, extending as it does far beyond musical thought.[53]

Beyond a passing reference to cyclic influence in the tenth quartet, the program notes by Inouye, which accompany the recordings of quartets one through eleven performed by the Borodin Quartet, confine themselves to a traditional schematic analytical approach.[54]

Shirinsky, like Inouye, limits his remarks to historical background and traditional schematic analyses.[55]

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[53]Keller, p. 8.

[54]Yoritoyo Inouye, "Shostakovich: The Complete String Quartets," program notes accompanying Seraphim record albums SIC-6034 and SIC-6035, n.d.

[55]V. Shirinsky, notes in volumes I, II, and III of the Shostakovich quartets one through twelve. (Opa-Locka, Florida: Edwin F. Kalmus, n.d.).

Summary

A review of available historical literature suggests that it is time for a new English language biography of Shostakovich. When this biography is written, it will be most useful if the author is able to unite a source rich in reliable biographical data with scholarly perception in dealing with the composer's music. The biographical and Russian-Soviet historical literature reviewed places Shostakovich in the company of the important composers of the twentieth century.

The review of literature concerning motive and thematic unity, especially since about 1950, illustrates an increasing trend on the part of writers about music to acknowledge the importance of thematic growth and transformation in the compositional process. This is true for general theory texts, forms and analysis texts, music history texts, music education texts, appreciation texts, studies which attempt to show the evolution of style characteristics in various composers, studies in esthetics, and doctoral dissertations covering a broad range of composers and schools.

Each article reviewed in the literature treating the Shostakovich string quartets has suggested, either by inference or by positive statement, the need for analytical studies dealing in depth with these compositions. Additionally it was noted that all of these authors called attention to various motivic and thematic similarities between and/or among the quartets. One or more of the quartets from number seven through number ten were selected for special commentary by every author.

Chapter 3

ANALYTICAL APPROACH

This study was an investigation of recurring linear material in string quartets seven, eight, nine, and ten of Dmitri Shostakovich. The primary objective of the study was to identify those motives which contributed to the growth of themes and thematic areas and to isolate those motives and themes whose characteristic elements were observed as contributing to structural unity between and among the movements of these quartets. The analytical effort was to correlate the effect, and in some instances the uniqueness, of a particular aural impression by tracing its heredity.

As noted in the Review of Related Literature, several writers had observed motivic similarities among these four quartets. A preliminary investigation yielded a substantial number of similar motives both within and among these compositions. A growing subtlety in the application of recurrence techniques was also noted.

These observations suggested that there was a preoccupation with motivic manipulation in these quartets and that the composer's compositional processes were undergoing a period of review and

maturation at least in so far as motivic manipulation was concerned. A detailed analytical study was undertaken to discover if and to what extent these preliminary observations were valid.

The detailed investigation divides the influence of recurring motives and themes into two general categories: linear, and non-linear relationships. Linear relationships include variation, transformation, permutation, and the processes of anticipation and emergence. The preparatory anticipation process will generally be observed as operational among the lower architectonic levels of theme, thematic area, movement, or adjacent movements. Included are lines which are heard in close proximity to the original statement or a recurrence of a prominent motive or theme and which look forward to a characteristic rhythm, pitch frame, and/or contour of that motive or theme. Similar functions may be noted between thematic areas and between adjacent movements. The metamorphic emergence process is operational throughout a complete quartet or at the very least in non-adjacent movements.

All of these linear relationships are shown on the line score. Attention is called to the more subtle of these relationships in the discussion which follows the line score. Non-linear relationships include the influence of prominent motives on the initial intervals of sequence construction and entrances of imitation, tonal centers, and vertical structures.

While sequence construction, entrances of imitation, and tonal centers are not strictly linear, their basic impact is horizontal. They are ordinarily quite visible on the line score and they are discussed as they occur. The influence of prominent motives on vertical structures

is far less frequent and less readily apparent. For these reasons, discussion of the influence of prominent motives on vertical structures is generally reserved for a summary at the end of each composition.

A separate chapter is devoted to each of the four quartets. When necessary for clarification of detail, the discussions of quartets seven, eight, and nine are illustrated both by pertinent examples and by portions of the line score. The manipulation of motives and the influence of motives upon structural unity in the tenth quartet is both subtle and far-reaching. In order to adequately convey the many subtle, far-reaching, and continuous processes of motive variation and transformation, the discussion of the tenth quartet is accompanied by a continuous line score. Constant visual contact with the music is thus achieved and the continuity of motivic influence and growth as well as structural integrity are maintained.

The number of lines shown on the line score is governed by their relevancy to the motives and themes under discussion. More than one line is used when it has been necessary to clarify some reference in the discussion, or whenever differing motivic influences are at work between or among two or more voices. In order to distinguish the line score from examples used to clarify discussion, the line score is always presented in reduced size and is headed by a structural designation from the graphic analysis chart. Specific examples which are used to clarify the commentary retain the original size of the published typography.

Continuous measure numbers have been placed above the line score to facilitate referral from the pertinent discussion. In the many instances of recurrence of themes or thematic areas, smaller measure

numbers which correspond to the original statement are found under the pertinent measures of the score.

For identification purposes the prominent motives of each quartet are labeled with small alphabetically consecutive letters which are bracketed. Thus [a] is the first prominent motive of the quartet under discussion.

The discussion of each movement of a quartet is preceded by a thematic index of prominent motives and themes and by a graphic analysis of the formal structure. Motives used in the construction of introduction, development, and coda sections and transition areas are indicated on the graphic analysis charts. The order of motives shown on these charts does not necessarily indicate an order of appearance, but merely that the influence of those motives is present.

The prominent motives of each chapter are found in the appendix which follows the bibliography. This convenience allows the reader to be in quick visual contact with all of the prominent motives of any one of the four quartets.

Capital letters are used throughout this study to indicate tonal centers at important structural divisions regardless of whether the scale basis is major, minor, modal, modal mixture, or synthetic. Where change of scale basis is used as a method of variance or transformation this will be noted in the discussion but not on the graphic analysis diagram.

Chapter 4

STRING QUARTET NO. 7 IN F# MINOR, OPUS 108

The seventh quartet was composed in the spring of 1960 and was dedicated to the memory of the composer's first wife Nina Vasilyevna who died in 1955. The first performance was played in Leningrad on May 15, 1960 by the Beethoven String Quartet.

This is the shortest of the four quartets analyzed for this study. The three movements are performed without pause in eleven minutes. The third movement is divided into two contrasting sections: a fugue and a waltz. This division creates an aural effect of four movements, an effect which is heightened by the fermata which appears over the double-bar which separates the waltz from the fugue.

With the exception of the fugue, the atmosphere of this quartet may be described as relaxed. The technical and emotional demands made upon the performers are moderate. Although the dynamics of the fugue are marked either double or triple _forte_ throughout, dynamics in the remainder of this quartet rise to _forte_ only twice: a brief climax in thematic area II of the first movement and three measures of a retransition to recurrence of theme Ia of the same movement.

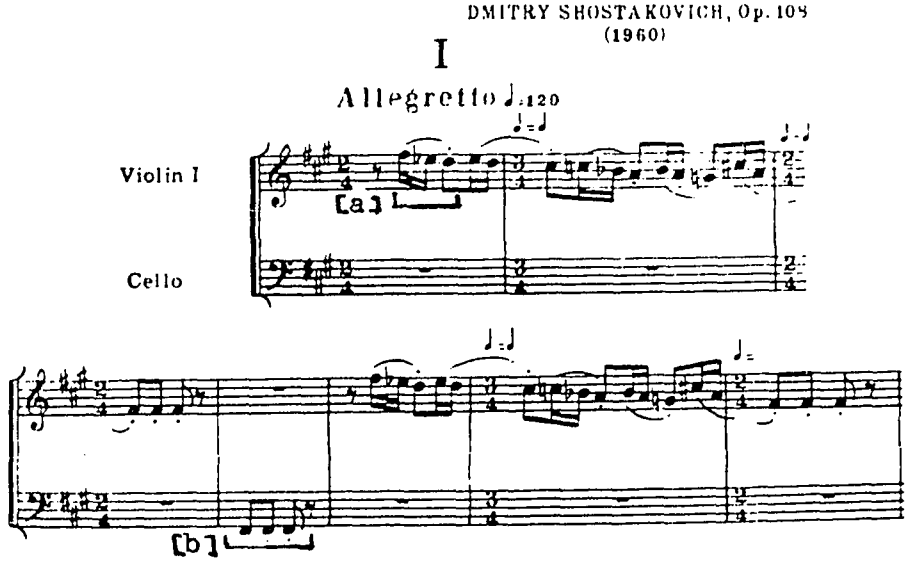
The formal scheme of movement one is a sonata-type design without development, thus justifying the designation of sonatina. The second movement is a ternary design. The fugue section of movement three features an exposition, a development with stretto, and a short coda. This coda effectively depletes the tremendous energy generated by the fugue and prepares the ear for the relaxed nature of the waltz section.

The graphic analysis charts show recurrence of the several thematic areas as they outline the macro-structure of the various movements. Variation and transformation of themes is a prominent linear feature of this quartet.

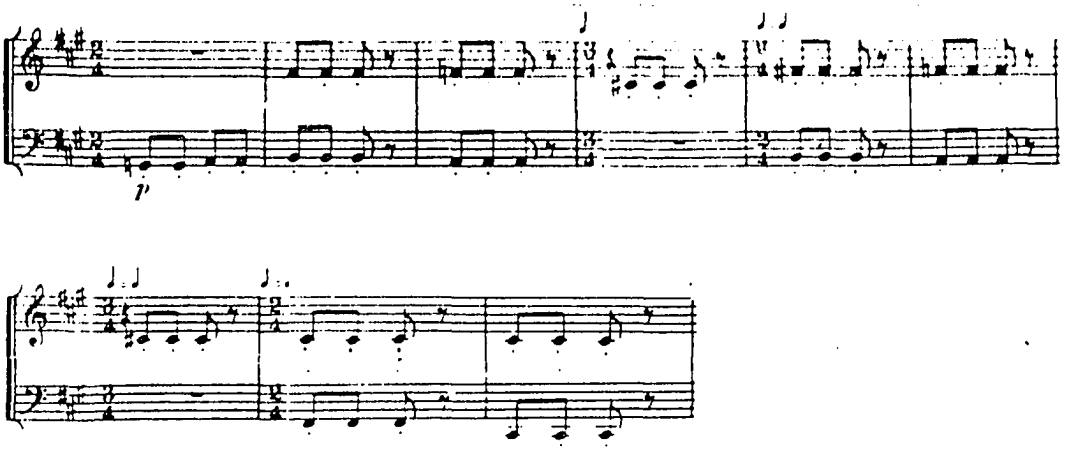
THEMATIC INDEX

THEME Ia

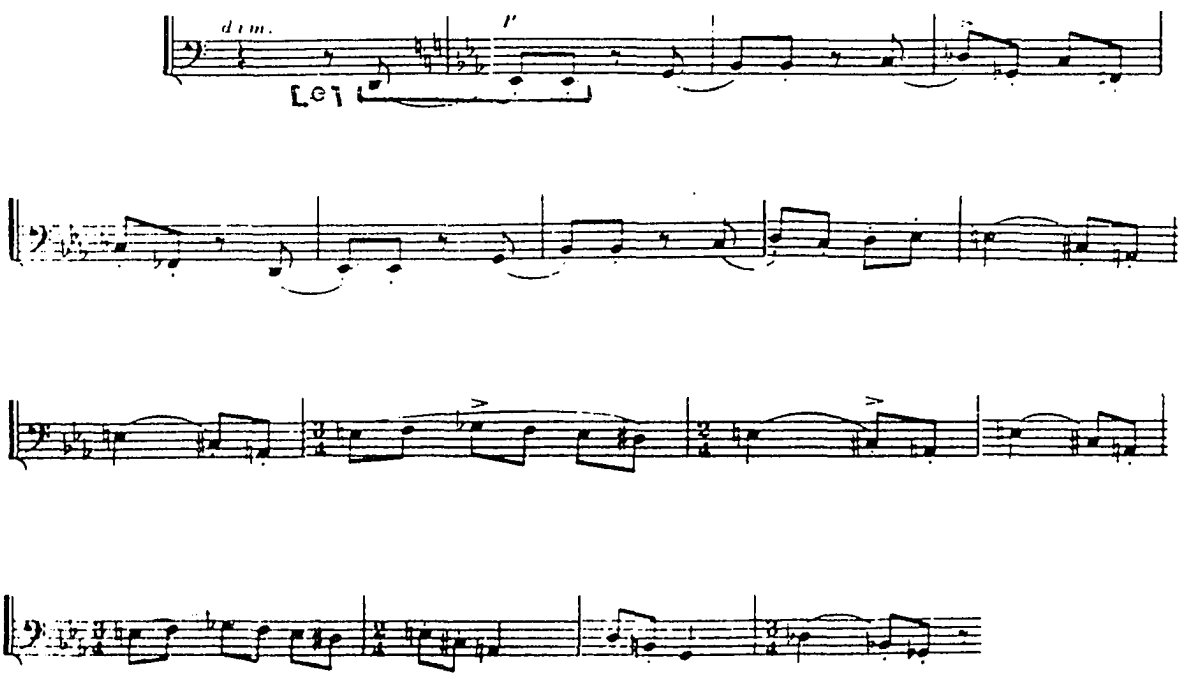
Seventh Quartet
Movement One



THEME Ib



THEME IIa



GRAPHIC ANALYSIS OF FORMAL STRUCTURE

First Movement — Allegretto - F# - Sonatina - 218 measures - mixed meter.

2/4 3/4 **Thematic Area I** — transition

A	B	A	[d] [a] [b]
1	8	17	29

F#:

2/4 3/4 **Thematic Area II** — retransition

A	A'	A''	[a] [c] [f]
46	62	80	97

E^b:

3/8 **Thematic Area I'** — transition

A	B	A	[d] [a] [b]
106	117	126	150

F#:

2/4 3/4 **Thematic Area II**

A	A'	A''
170	184	199

F#:

2/4 3/4 **Coda Section**

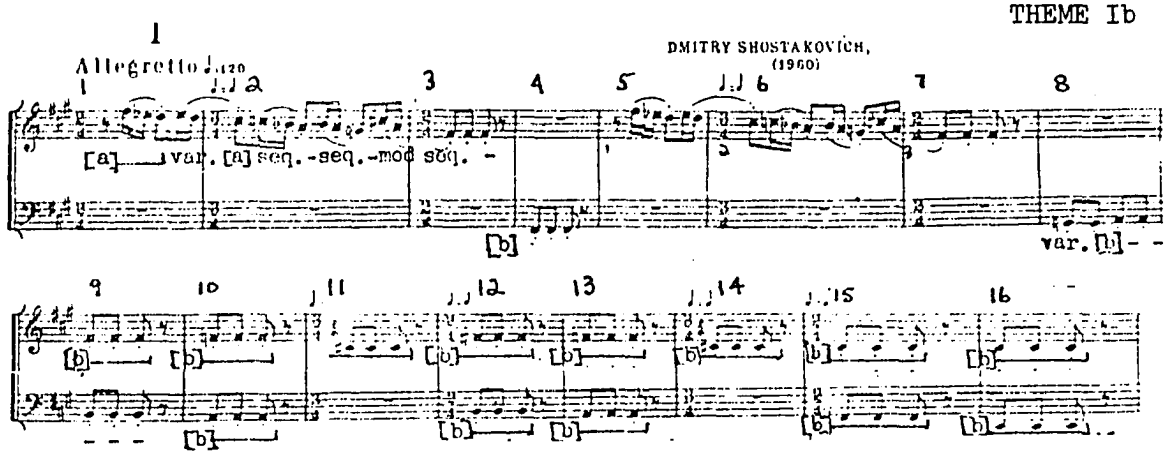
[c] [b]

204

F#:

THEME Ia

THEME Ib



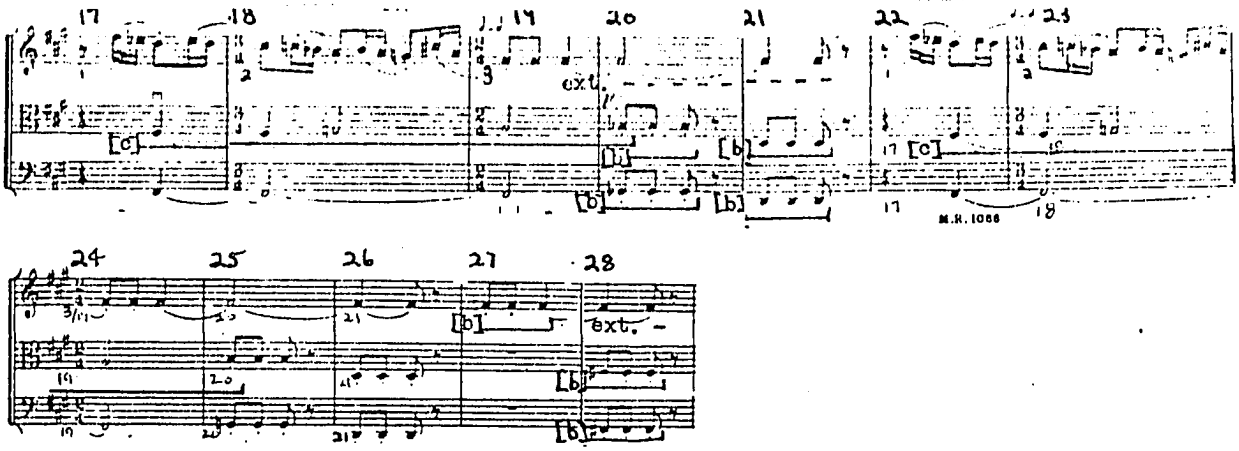
Theme Ia presents three events whose aural impact is of the most basic importance to unity among the linear materials of this quartet.

1. With the exception of the pitch d, the octave descent at measures one through three describes a pitch sequence based upon a scale of alternating minor and major seconds from f# tonic: f#-g-a-b^b-c-c#-e^b-(e)-f#. This scalar pattern is a prominent sound among the linear materials of this quartet.

2. At measure three the extension of the modified sequence of motive [a] gives birth to motive [b] (m. 4) whose three note pattern is an augmentation of the rhythm of [a]. The three note repeated pattern of [b] is the sole basis for theme Ib (m. 8-16). The number three is also prominent in the phrasing construction of themes Ia and Ib which unfold as four plus three and three plus three plus three respectively.

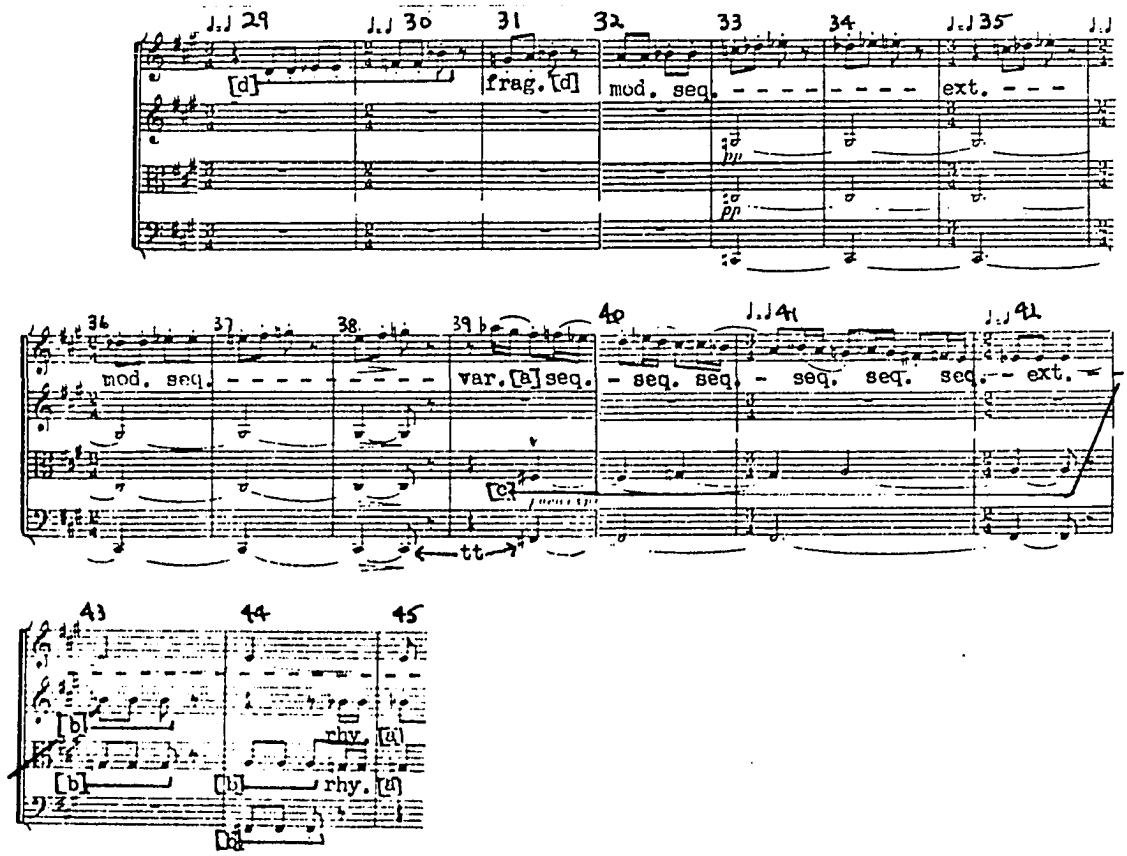
3. A mixture of duple and triple meters is a prominent characteristic of all the movements of this quartet.

THEME Ia



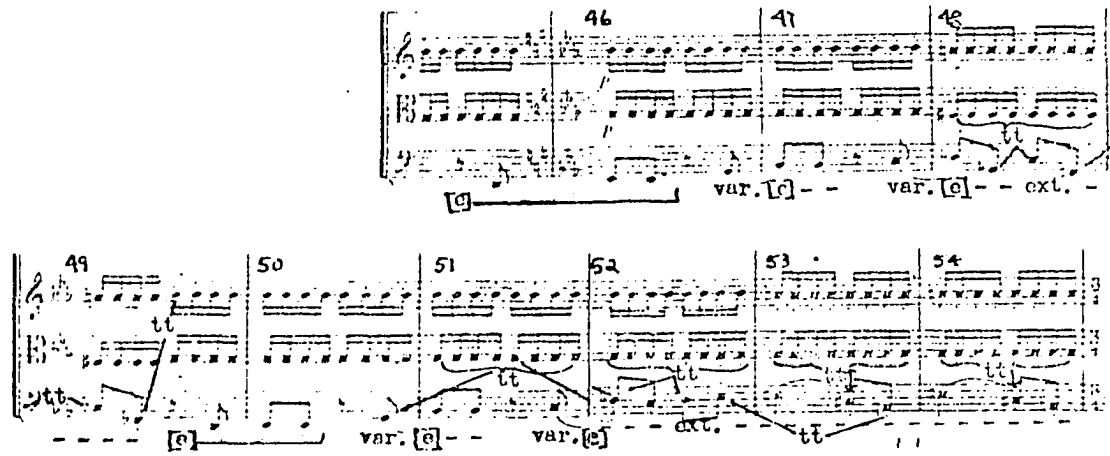
The alternating scalar pattern which was implied by the sequence pattern of measures one through three is clearly etched by motive [c] in the viola at measures seventeen where theme Ia returns.

TRANSITION

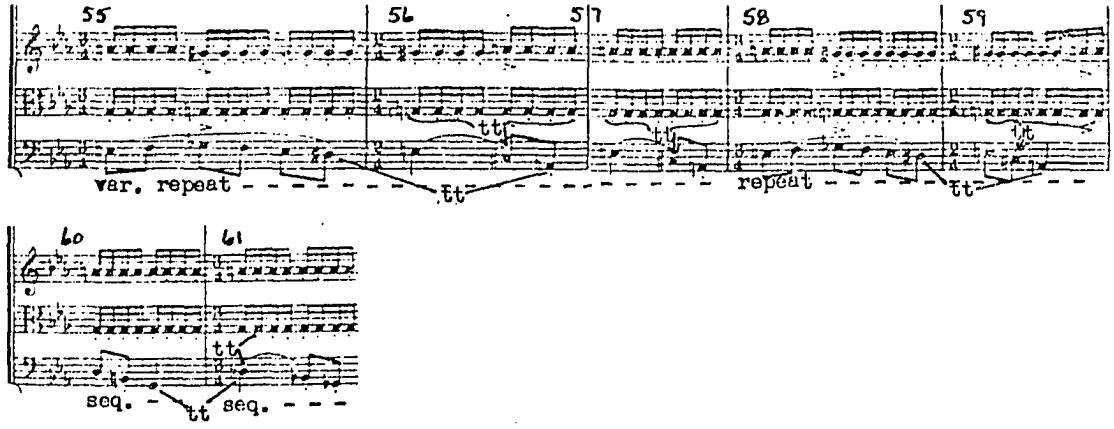


The repeated pitches, the three note fragments, and the staccato of motive [d] all indicate an influence of motive [b] in this transition area. At measures 29-38 the first violin contour is constructed by variation, fragmentation, and sequence of motive [d]. Although the descent from measures 39 through 42 is accomplished by means of motive [a] the aural impression is one of modified retrograde of measures 29-38. The three note ascending pattern which is prominent in the manipulation of [d] is balanced by the three note descending pattern of motive [a]. The alternating major and minor seconds which are prominent in the manipulation of [d] at measures 31-38 find their counterpart in motive [c] in the viola line at measures 39-43 and relate to the scale basis of motive [a]. The ear also recognizes that the ascent of an octave plus a fourth at measures 29-38 is answered at measures 39-42 by the descent of an octave plus a fourth. Motive [b] in the lower three instruments at measures 43-44 serves as terminal punctuation for this transition just as it did for themes Ia and Ib.

THEME IIa



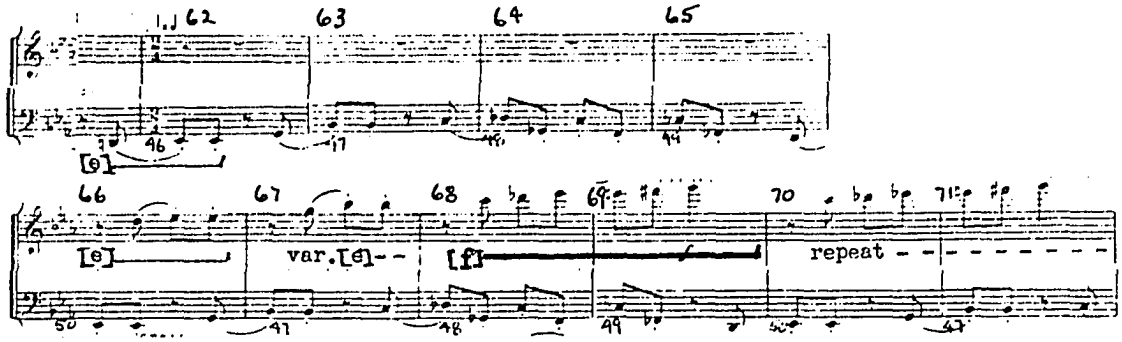
THEME IIa continued



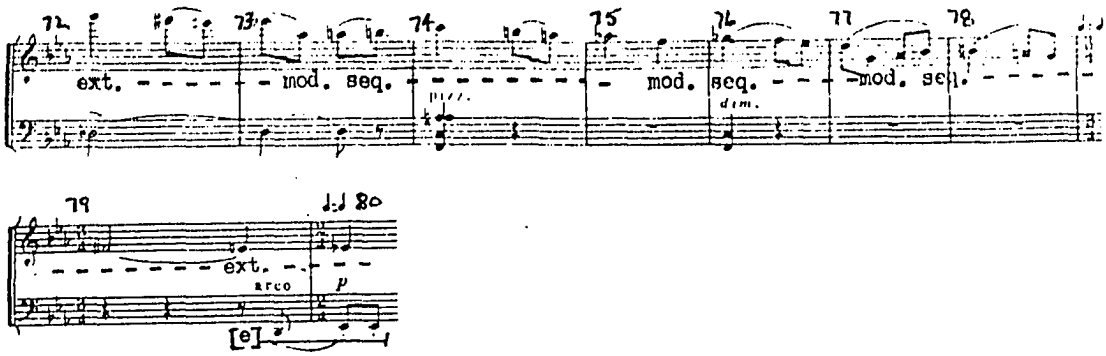
The three notes of motive [e] in the cello at measures 45-46 show a continuation of the influence of the number three among the prominent motives of this quartet. Like themes Ia and Ib, theme IIa grows from a single motive. At measures 44-45 the repeated eighth notes of [b] assume the ♩♩ ♩ rhythm of motive [a] and move thence to the repeated sixteenth notes which accompany theme IIa.

The sound of the tritone is prominent throughout theme IIa. This is not a new sound however, for its use here has been anticipated by the c and f# pedal tones in the cello at measures 33-42.

THEME IIa'



THEME IIa' continued



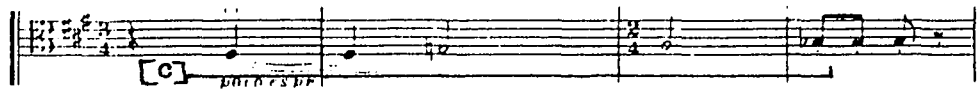
At measure 66 the first violin enters in imitation of the cello line and then continues at measure 68 with a series of patterns which show an influence of the alternating scalar pattern crystallized by motive [c]. The first of these patterns is motive [f] (m. 68-72) a six note ascending contour whose pitch frame and scalar ascent were anticipated in measures 33-38 of the preceding transition. Motive [f] looks forward to the second half of motive [m]. Motive [m] is the lead motive of the fugue theme of the third movement while theme IIa is a transformation of the fugue theme. Motive [m] is therefore one of the most prominent sounds of that movement.

Example 4:1 presents a summary of the initiation and emergence of the alternating scalar pattern as observed on the line score.

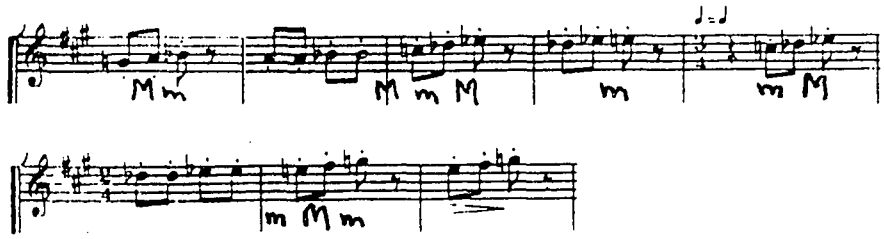
Ex. 4:1

Mvt. 1 (m. 1-3)

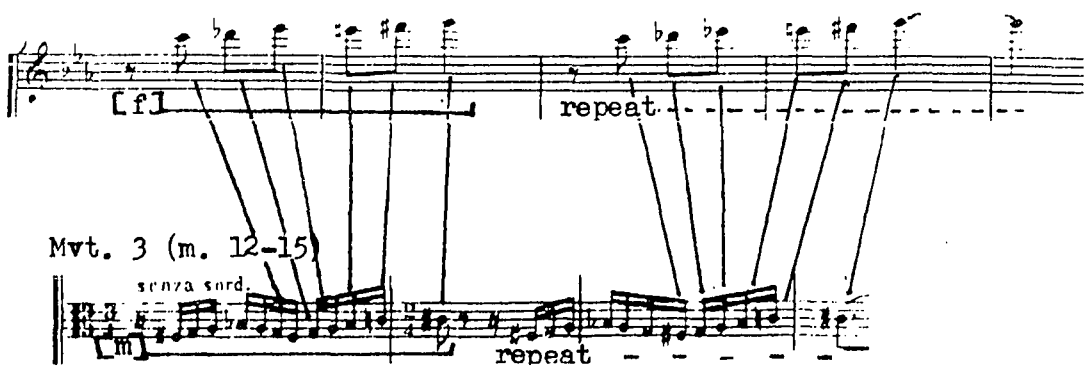
Mvt. 1 (m. 17-20)



Mvt. 1 (m. 31-38)



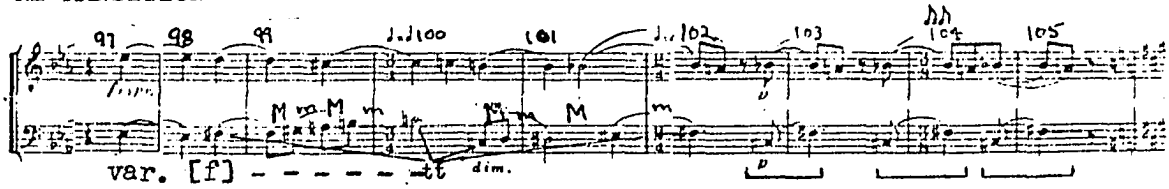
Mvt. 1 (m. 68-72)



Mvt. 3 (m. 12-15)

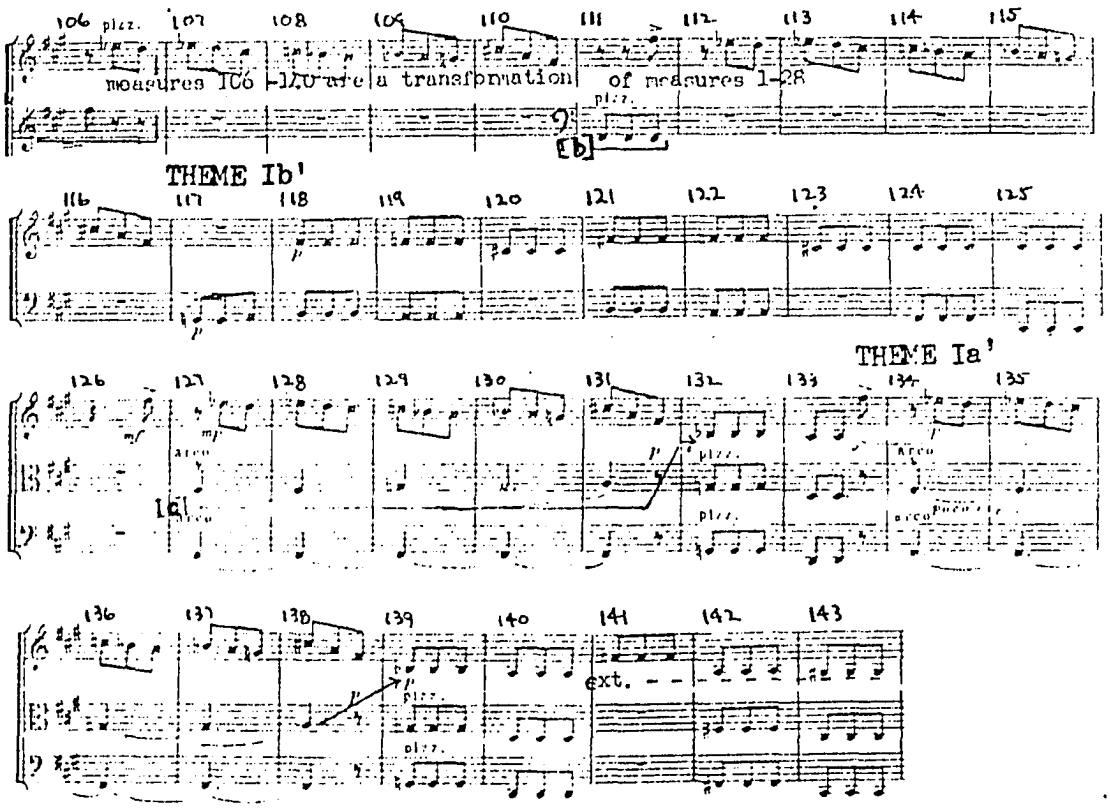
The discussion of movement three will illuminate motive [m] as one of the prominent sounds of the fugue theme and of its transformation as theme IIa.

RETRANSITION

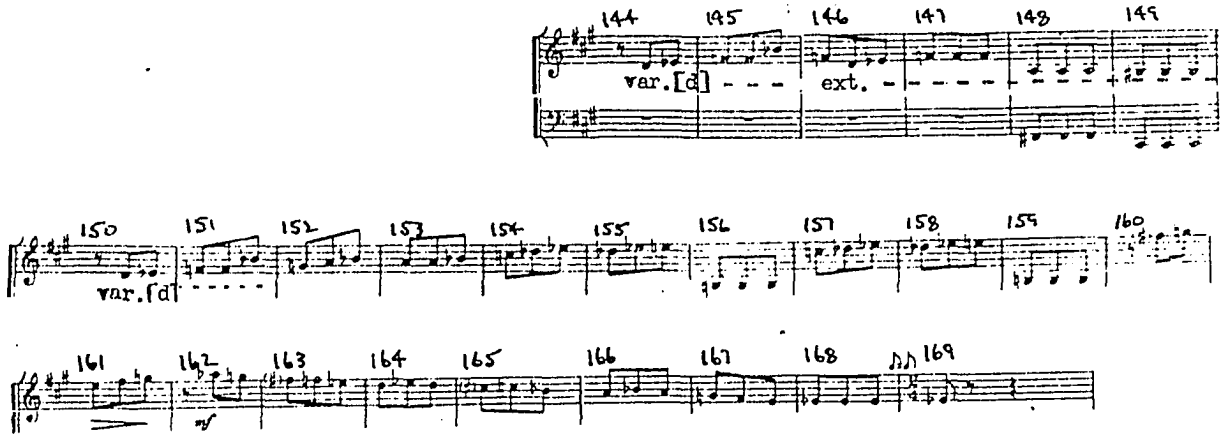


The cello line at measures 98-102 of the line score emphasizes the f#-c tritone which was a prominent feature in the cello at measures 33-44 of the transition to theme IIa. The alternating major and minor seconds of the cello line show a variation of motive [f] (m. 97-100). The influence of [c] is observed in the syncopation and longer note values of the upper voice. The influence of the number three is observed in the three iterations (m. 102-105) of the final cadence which prepares both the F# tonal center and the $\frac{3}{8}$ meter of thematic area I at measure 106.

THEME Ia'



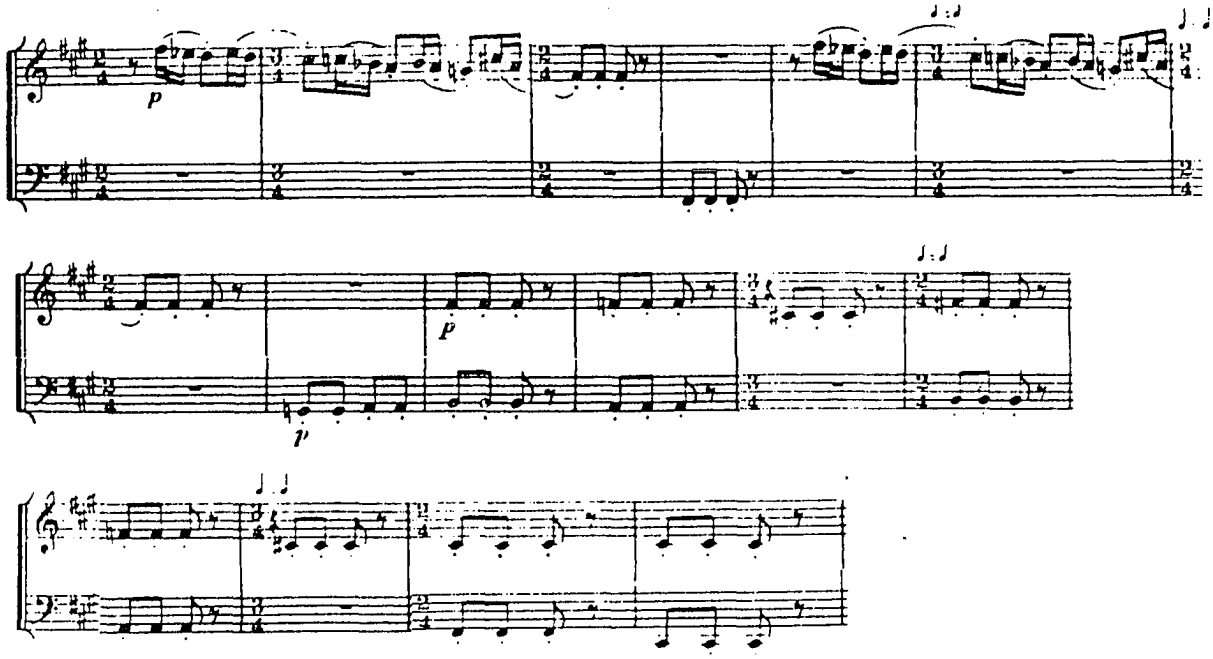
THEME Ia' continued



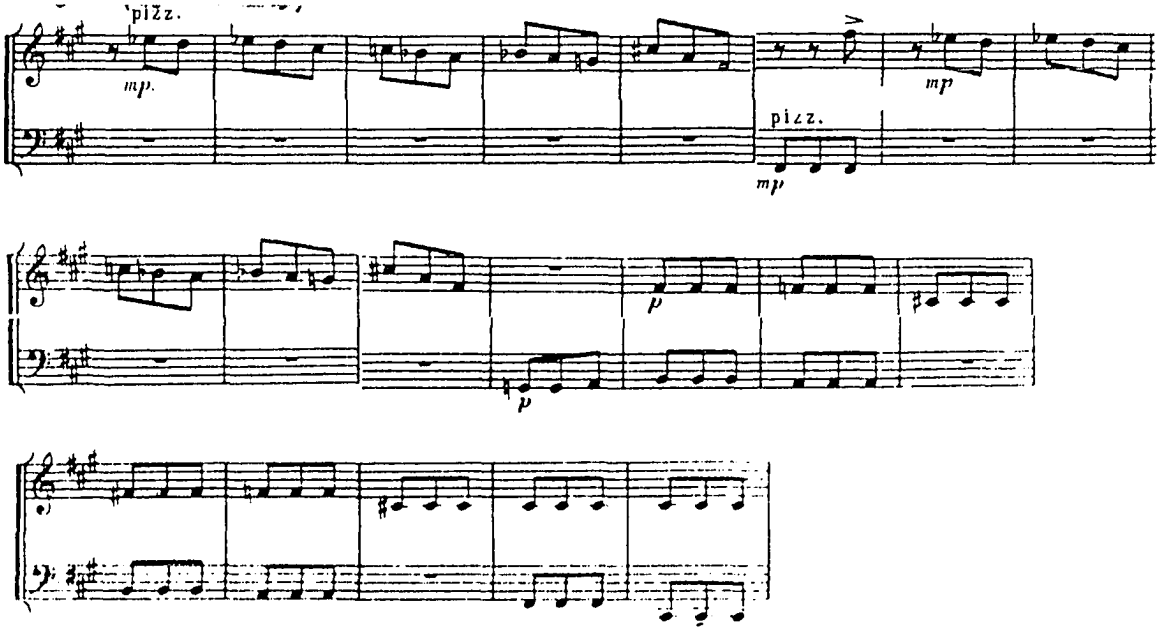
The line score shows the prominent sounds of thematic area I' and the transition to area II in their recurrence at measures 106-169. This recurrence is a transformation of the exposition section measures 1-42 which has been achieved principally by a change of meter and by use of pizzicato. The change of meter to $\frac{3}{8}$ anticipates the character of the waltz portion of movement three. It is not only the waltz character which is anticipated, for the first sixteen measures of this transformation of thematic area I of movement one become theme B of that waltz. The first sixteen measures of thematic area I and their transformation at measure 106 are shown in example 4:2.

Ex. 4:2

Mvt. 1 (m. 1-16)



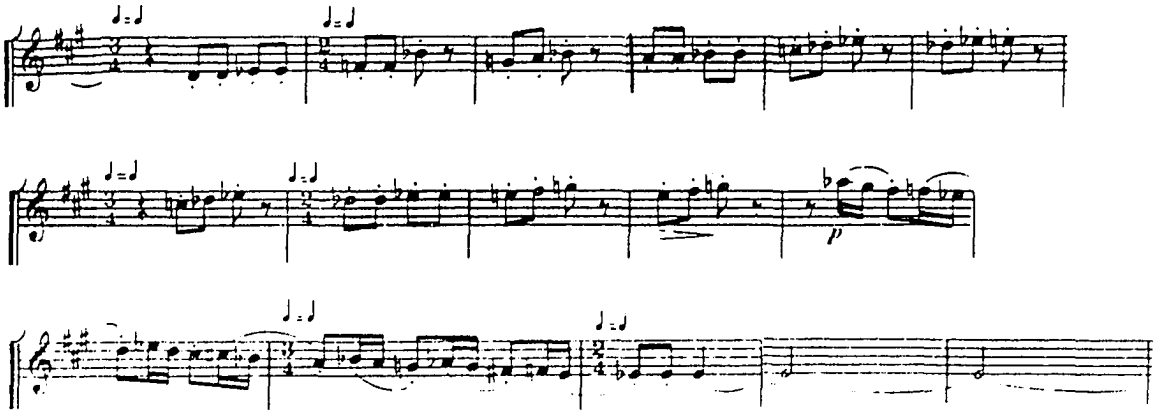
Mvt. 1 (m. 106-125)



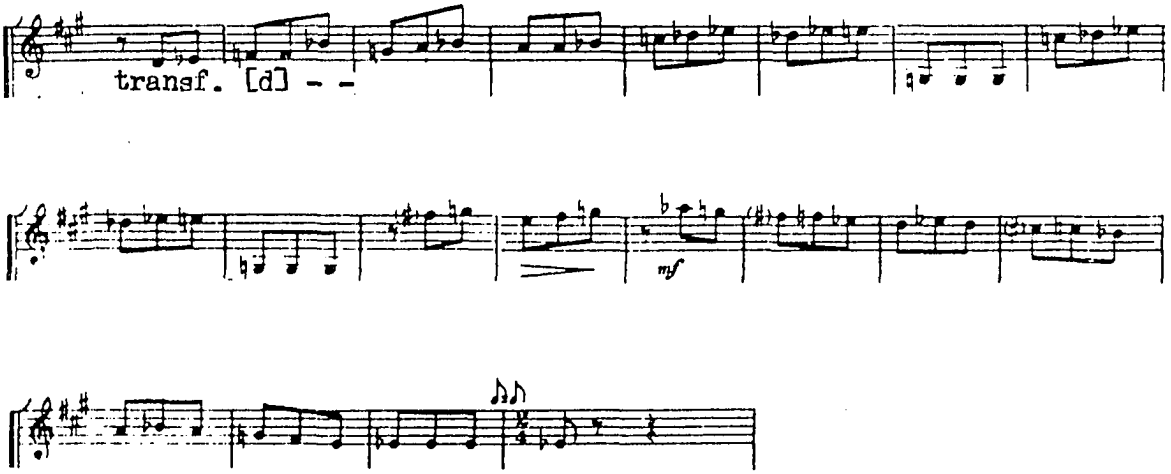
It was noted that the second half of the transition (m. 29-42) was aurally perceived as a modified retrograde of its first half. This aural impression is now strengthened at measures 150-169 where a transformation of the original transition emphasizes the modified retrograde effect by maintenance of a constant meter and rhythmic pattern. The two transitions are shown in example 4:3.

Ex. 4:3

Mvt. 1 (m. 29-44)

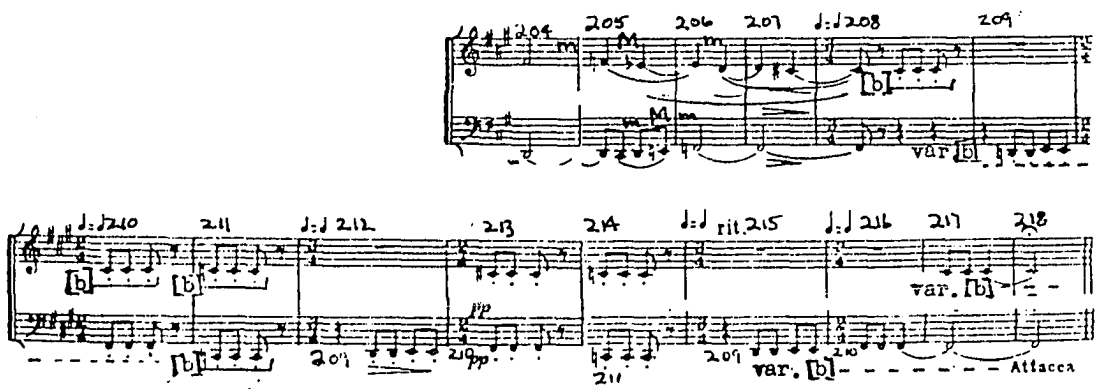


Mvt. 1 (m. 150-169)



The recurrence of thematic area II at measures 169-203 is basically a transformation of measures 45-82. No new techniques of variation, transformation, or permutation which pertain to unity were observed.

CODA



The alternating scalar pattern implied by motive [a] and crystallized by motive [c] initiates the coda section. At measures 204-208 the first violin and cello respectively suggest a modified retrograde and diminution of motive [c]; they are also in mirror relationship. Motive [b] accounts for the remainder of this short coda both by its linear presence and the three plus three plus four phrasing of the closing ten measures. Although the whole tone implications of the cello contour (c-d-e-f#) will be used again to close movement three they are not otherwise a prominent linear feature of this quartet. That the whole-step scalar pattern claims aural attention here is due no doubt to the fact that it is an unexpected sound. A close investigation of the line score shows that the alternating scalar pattern and chromatic movement dominate the linear material throughout the movement. The

origin of the c-f# pitch frame of this closing cello contour may be traced to the tritone in the cello at measures 33-42 (see line score p. 35). Although the tritone was prominent in thematic area II the pattern of whole steps was not observed.

Summary

The three prominent aural events cited at the beginning of this discussion were: (1) the implied alternating scalar pattern of motive [a], (2) the importance of the number three as articulated by motives [a] and [b], and (3) the mixture of duple and triple meters.

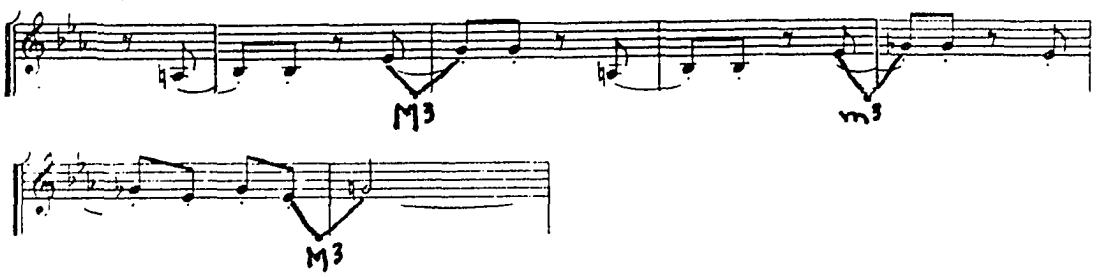
This investigation has shown that the scale pattern of alternating minor and major seconds which was implied by the first aural stimulus motive [a] is a prominent characteristic among the linear materials of this movement.

1. Theme Ia, except for the pitch d, is based upon an alternating scale from an f# tonic.
2. Motive [c] is an alternating scalar pattern.
3. The prominent linear material of the transition has an alternating scalar basis.
4. Motive [f] of thematic area II is constructed from the alternating pattern.
5. The cello line at measures 98-102 of the retransition stresses the alternating scalar pattern.
6. The prominent alternating patterns of the exposition section are retained in the recapitulation of thematic area I, the transition, and thematic area II. Measures 204-208 of the coda show alternating patterns in the first violin and cello.

Related to the alternating scalar pattern and also implied by motive [a] is an interplay of minor versus major thirds: the expansion of a minor third to a major third or the contraction of a major third to a minor third. As shown in example 4:4 this implied interplay of a minor versus a major third is effectively displayed in the first violin contour at measures 85-90.

Ex. 4:4

Mvt. 1 (m. 85-90)



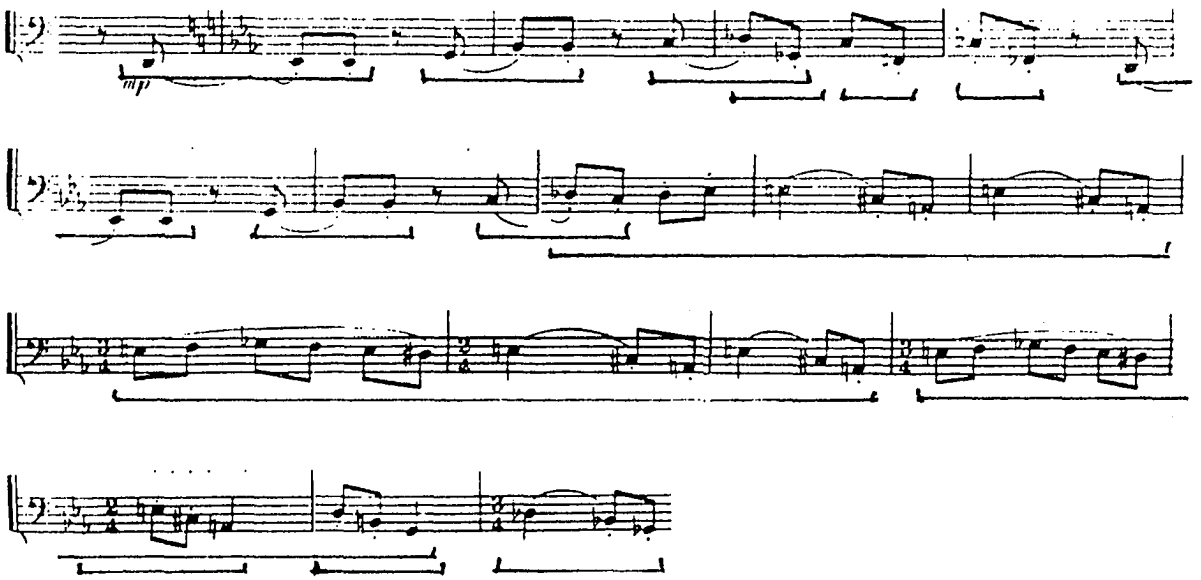
The importance of the number three as initiated by motive [a] is reliably established by theme Ia which owes its existence to variation and sequence of the three notes of motive [a]. From motive [b] (m. 3), which continues the number three, emerges theme Ib whose only motive is [b] and whose phrase construction is three phrases of three measures each. Thematic area I is a three part (ternary) structure.

Motive [d] which initiates the transition (m. 29) begins with three pairs of repeated pitches, while the fragmentation of [d] in the first half of this transition capitalizes upon groupings of three pitches. The phrasing of this portion of the transition is three plus four plus three. Variation and sequence of the three notes of motive [a] account for the second half of the transition. The closing punctuation of this transition is accomplished by the three notes of motive [b].

Like motives [a] and [b], motive [e] is a three note pattern. At the beginning of theme IIa motive [e] is followed by two varied recurrences for a total of three iterations of [e]. At measures 47-49 the last of these varied recurrences of [e] is heard twice in sequence to create a pattern of three. The cello contour at measures 52-54 is followed by two varied recurrences for a total of three iterations of this contour. The last of these varied recurrences is extended by sequence to create a pattern of three. This multiplicity of threes is shown in example 4:5.

Ex. 4:5

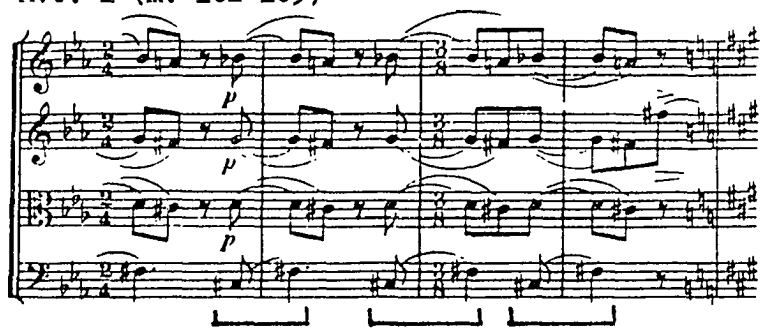
Mvt. 1 (m. 46-61)



As shown in example 4:6 the retransition at measures 97-105 closes with a cadence formula which is iterated three times to construct a three measure extension.

Ex. 4:6

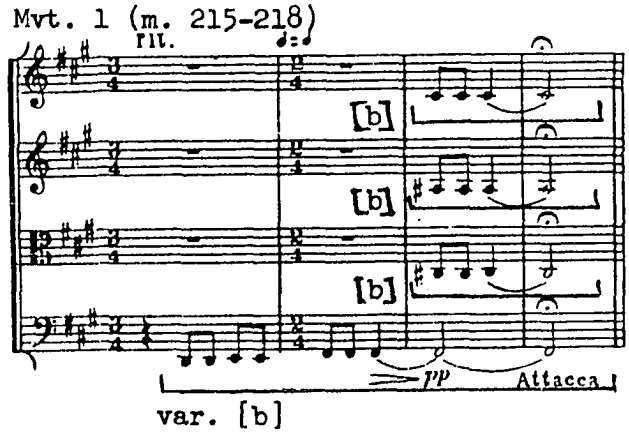
Mvt. 1 (m. 102-105)



The many influences of the number three in the recapitulation of thematic area I (m. 106-149) and the transition (m. 150-169) are strengthened by the $\frac{3}{8}$ meter of this transformed recurrence. No new influence of the number three was observed in the recapitulation of thematic area II. In the final three measures of this movement a temporal lengthening of the three notes of motive [b] is accomplished by extension of the final pitch in all instruments as shown in example 4:7.

Ex. 4:7

Mvt. 1 (m. 215-218)



var. [b]

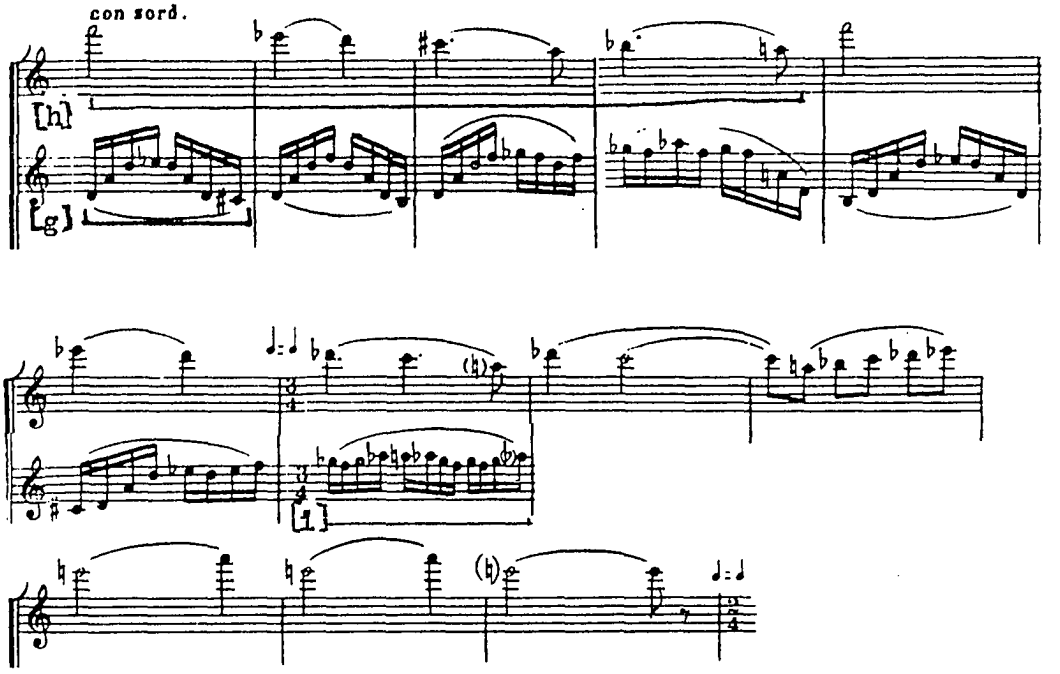
With the exception of the recurrence of thematic area I (m. 106-149) and the transition (m. 150-169) all thematic areas of this movement show mixing of duple and triple meters. This includes the exposition transition, the retransition to thematic area I, and the coda.

Of somewhat less importance to linear unity is the tritone which occurred for the first time as a prominent relationship between triad roots (b-f) at measures 9-13 of theme Ib. The tritone is also present at several different pitch levels in theme IIa. The transition areas (m. 29-44 and 150-169) and the coda (m. 204-218) feature a prominent c-f# tritone. The roots of the closing vertical structures of this movement outline the tritone c-f#.

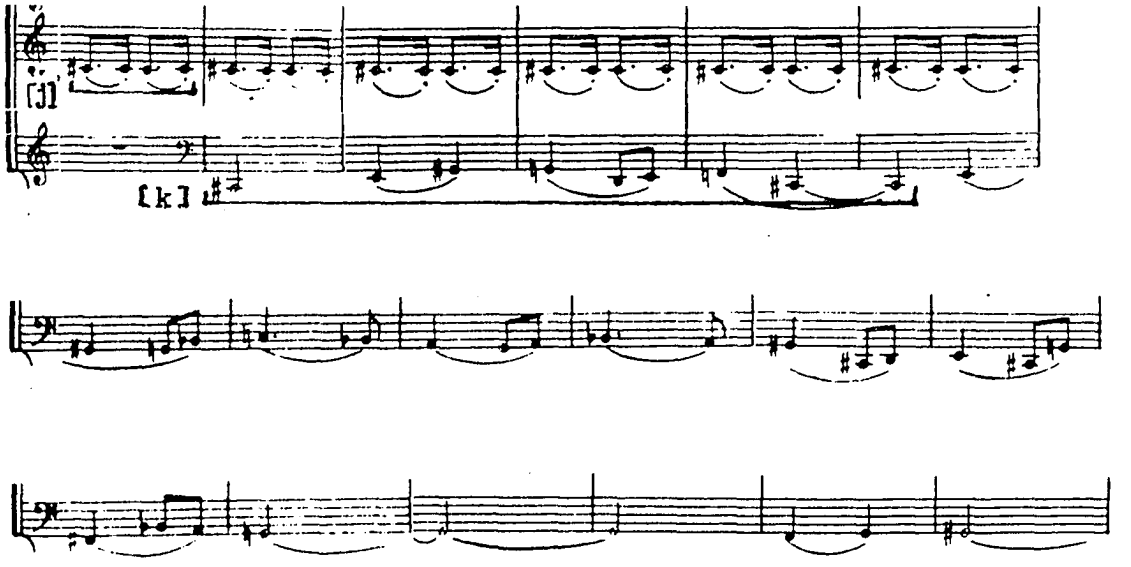
THEMATIC INDEX

Seventh Quartet
Movement Two

THEME Ia



THEME IIa



GRAPHIC ANALYSIS OF FORMAL STRUCTURE

Second Movement — Lento - D- Ternary - 76 measures - $\frac{2}{4}$ meter.

Introduction
[g]
1
D:

Thematic Area I

A	A'
5	18

D:

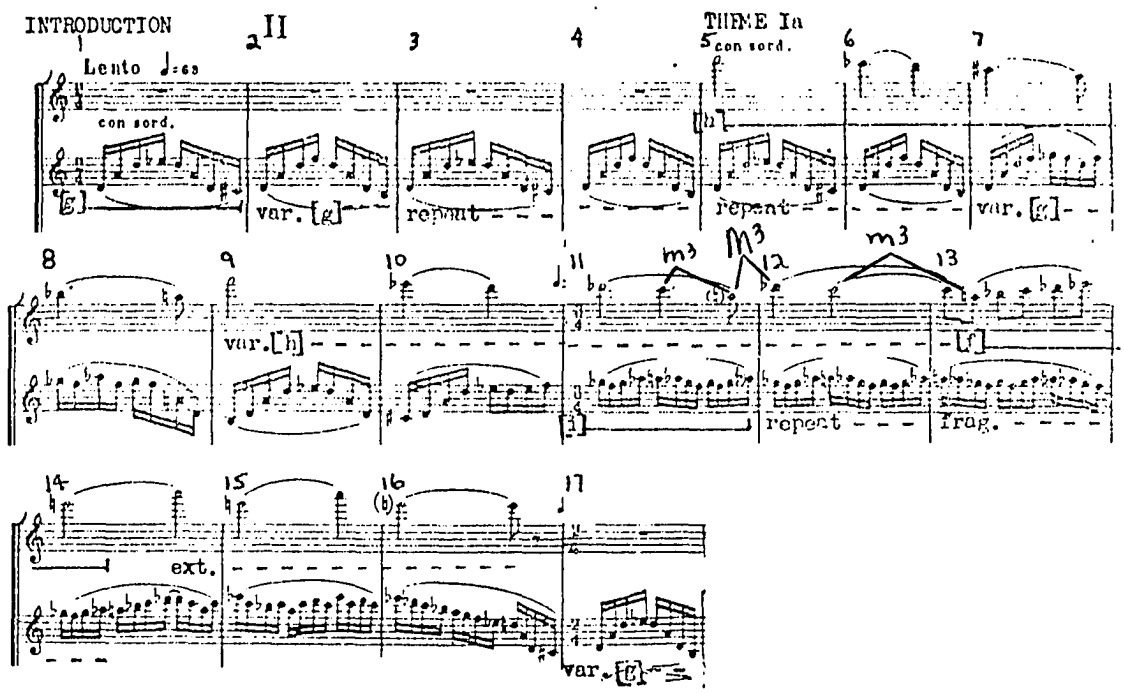
Thematic Area II

A	A'
36	53

C#:

Thematic Area I'

A
66
D:



Several manifestations of the influence of the prominent linear events of movement one are observed in the introduction and theme Ia of movement two.

1. The alternating scalar pattern: At measures 1-14 the pitches of the second violin contour (except for the lower neighbor c#) are contained in the alternating scale constructed from this movement's d tonic (d-e^{b}-f-g^{b}-a^{b}-a-b-c). From the middle of measure fourteen to the middle of measure sixteen the alternating scale features an a tonic and returns to the d tonic for the remainder of this line score. At measures eleven through sixteen the first violin describes the alternating scale from an a tonic. Also a prominent feature is the interplay of minor versus major thirds in the first violin at measures eleven through thirteen.

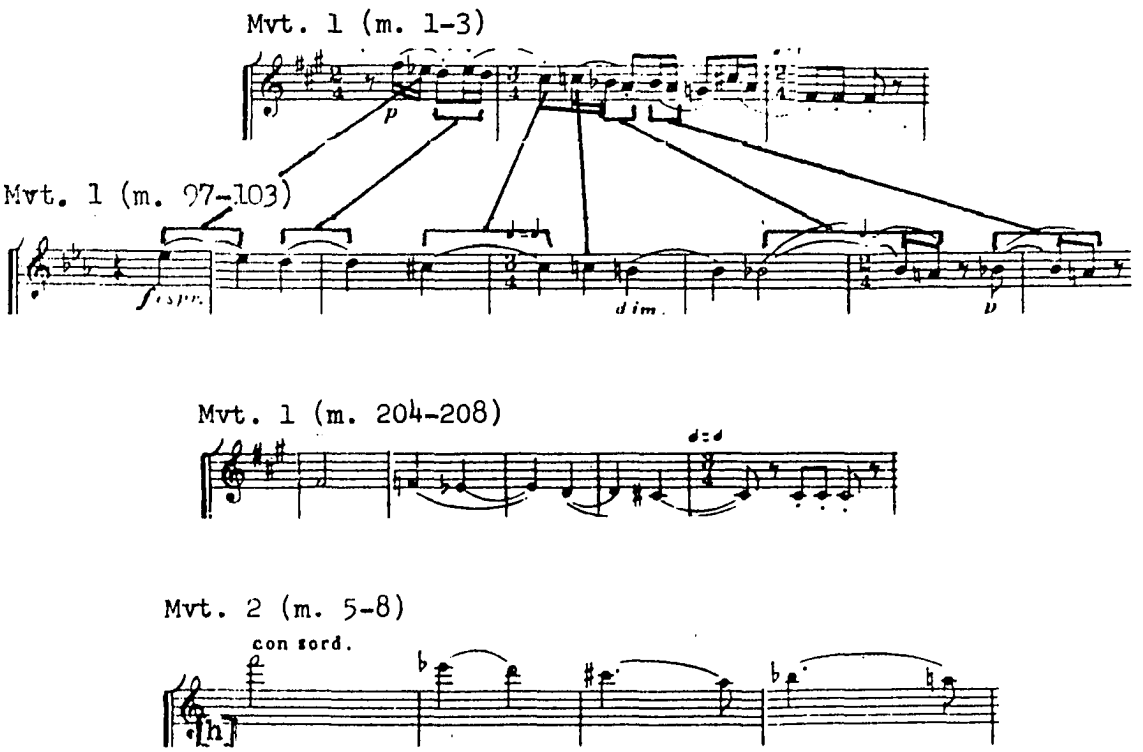
2. Influence of the number three is observed in measures 1-6 of the second violin where measures 1-2 recur twice and thus create a pattern of three groups of two measures each. Theme Ia is constructed of three phrases.

3. The mixture of duple and triple meters which was so characteristic of the thematic areas of movement one is observed in thematic area I

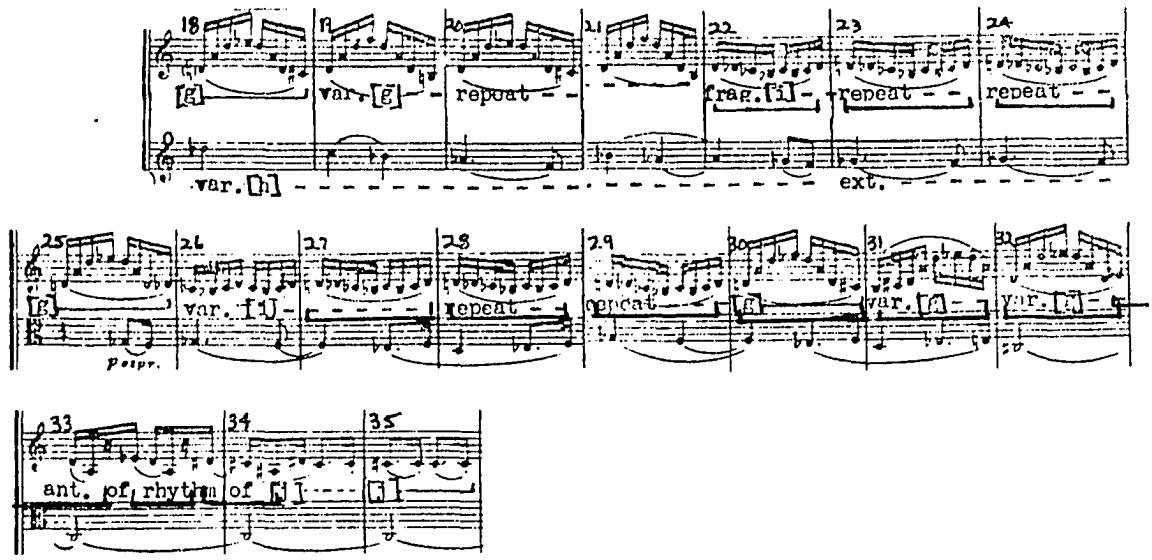
Motives [g] and [i] are important events in the metamorphosis of the fugue theme of movement three. The emergence of the fugue theme is documented in example 4:13 (p. 64).

Motive [h] emerges from the first violin at measures 97-105 of movement one. As shown in example 4:8 both of these contours show a marked affinity to theme Ia of movement one. A fragment of this same descending contour occurs in the first violin toward the end of movement one (m. 204-208), thus placing its sound in close temporal relation to motive [h].

Ex. 4:8

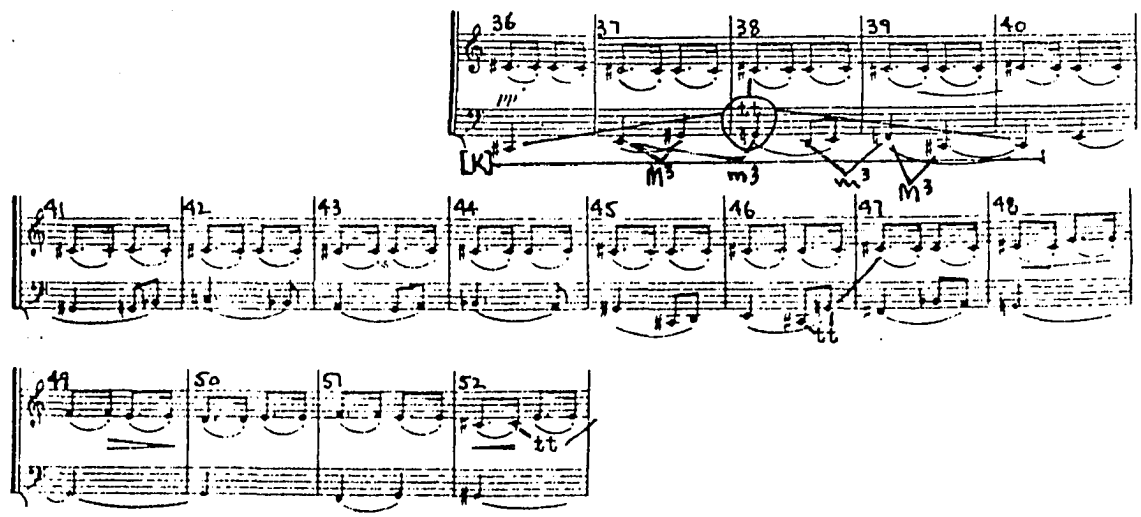


THEME Ia'



No prominent new techniques of variation, transformation, or permutation affecting unity were observed in theme Ia'. Four occasions where the number three has influenced recurrence or variation are shown on the line score. At measures 33-34 the continuous sixteenth notes of the second violin are modified to anticipate the rhythm of motive [j] (m. 35).

THEME IIa

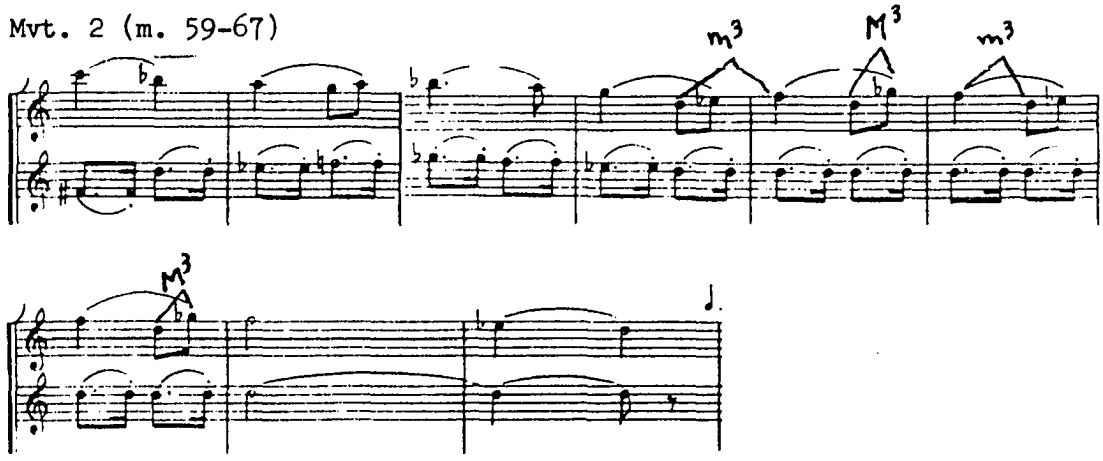


The six pitches of motive [k] display an alternating scalar pattern from the c# tonic of theme IIa: c#-d-e-f-g-g#. As shown on the line score these pitches are arranged in such a way that an interplay of major and minor thirds as well as the tritone c#-g are heard. No new techniques of motivic manipulation as it relates to unity were observed in theme IIa.

As shown in example 4:9, at measure 59 the second violin begins emphasizing the lower tetrachord (d-e^{b}-f-g^{b}) of the alternating scale constructed from a d tonic. This is in anticipation of a return to D for the abbreviated recurrence of theme Ia at measure 66. The first violin assumes the d-e^{b}-f-g^{b} tetrachord at measures 62-65 where the pitches are manipulated so as to create a prominent interplay of minor and major thirds.

Ex. 4:9

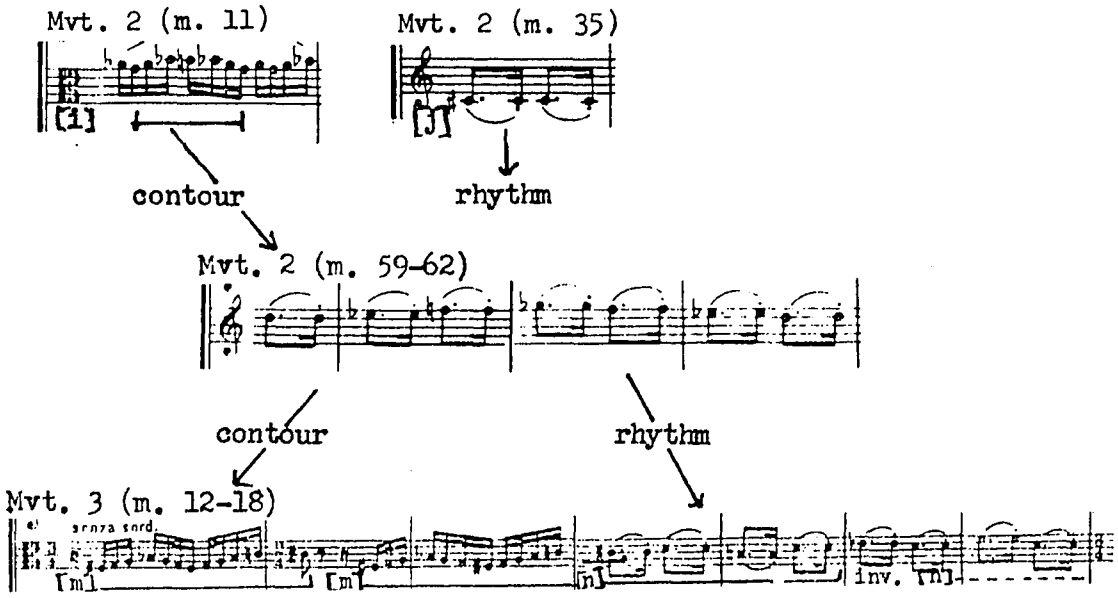
Mvt. 2 (m. 59-67)



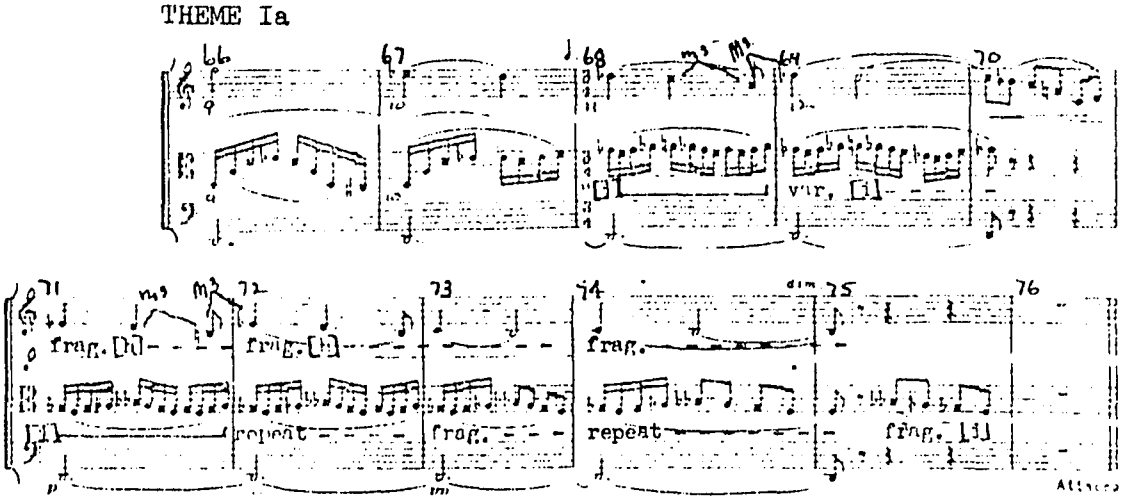
Throughout thematic area II the ♩. ♩ rhythm of motive [j] anticipates the rhythm of motive [n] which comprises the second half of the fugue theme of movement three. The relationship of this rhythm

to the fugue theme is reinforced at measures 59-62 where the alternating scalar pattern d-e^{b}-f-g^{b} anticipates the shape of the first half of motive [m] of the fugue theme. These relationships are shown in example 4:10.

Ex. 4:10



fugue theme



There are no new techniques of motivic manipulation with regard to unity in this abbreviated return of theme Ia. The first violin and viola emphasize pitches from the alternating scalar pattern: viola, f-g^{b}-a^{b}-b^{bb} and first violin, b-c-d-e^{b}. The d pedal in the cello anchors the tonality on D. An interplay of minor and major thirds is heard at measures 68-69 and 71-72 in the first violin.

The closing aural event is an augmentation of the central fragment of motive [i] which has emerged from the repetition and fragmentation of [i] which began in the viola at measure 69. What has occurred is that motive [i] has been reduced to its single most important characteristic: the alternating scalar pattern. The augmentation of this pattern at measures 73-74 increases its aural impact. This impact is further heightened at measure 75 where the augmented fragment of [i] is isolated without accompanying voices.

Summary

The alternating scale is the most prominent linear event which serves as a unifying factor between movements one and two. Influence of the number three was rare and therefore not an important linear factor in movement two. However, it must be noted that movement two is a well defined ternary structure.

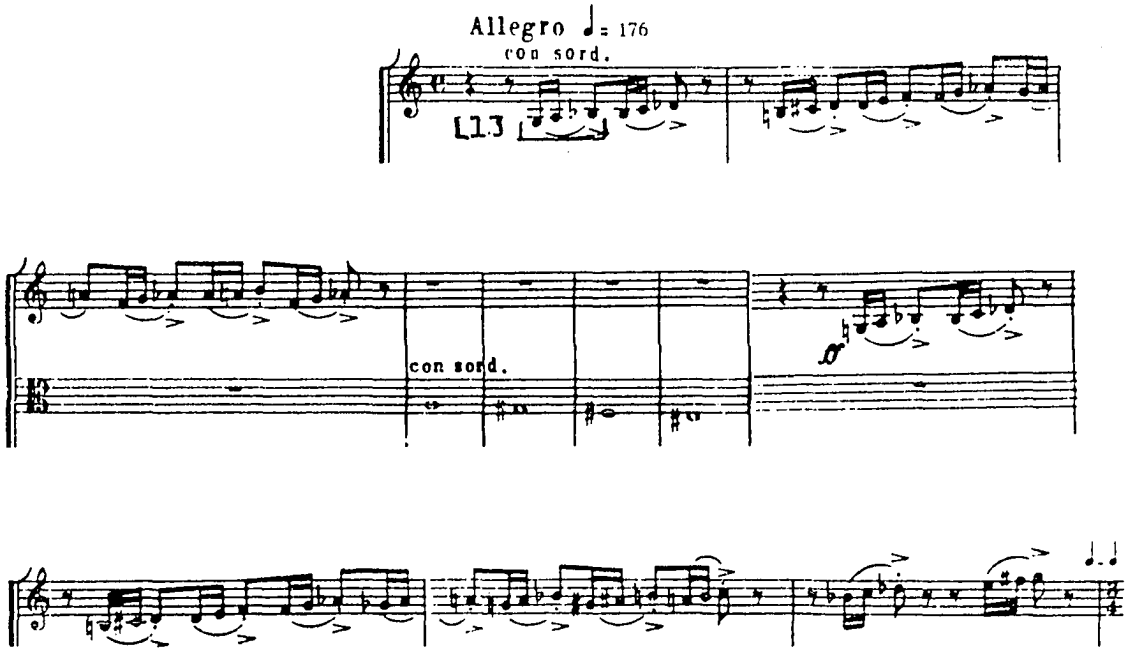
The mixed meter of movement one was suggested in this movement by the change from duple to triple and back to duple meter which occurred in theme Ia. This is hardly on a par with the frequent changes of meter which occurred in movement one. Also, due to the slower pulse (lento) of movement two the change of meter affects the ear much less

acutely than it did in the quick tempo (allegretto) of movement one. Therefore, due to its infrequent occurrence and the slowness of the tempo the mixed meter is not a prominent characteristic of movement two.

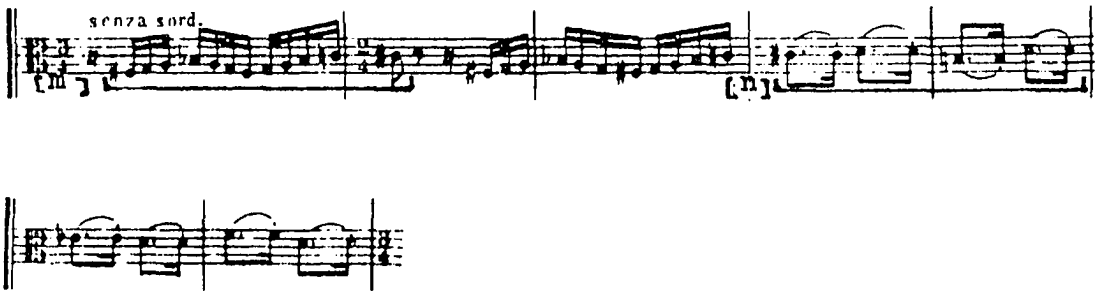
THEMATIC INDEX

Seventh Quartet
Movement Three

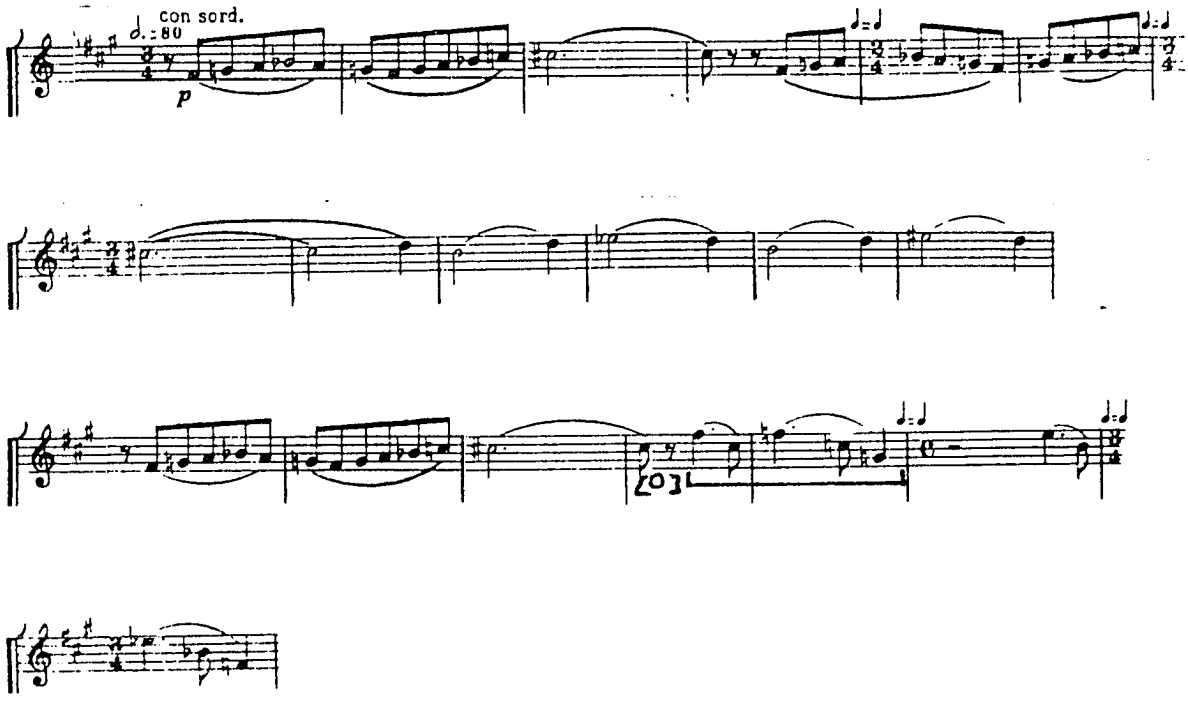
INTRODUCTION



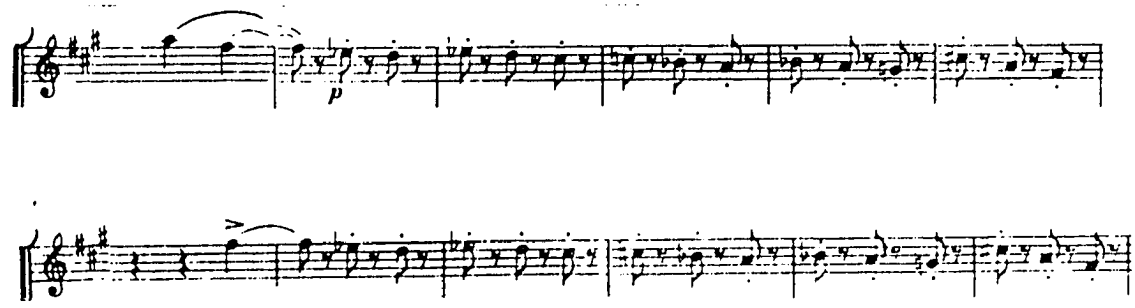
FUGUE THEME



THEME IIa



THEME IIb



GRAPHIC ANALYSIS OF FORMAL STRUCTURE

Third Movement — Allegro - F# - Large Binary - 362 measures - mixed meter.

4 4 Introduction
[1] [i]
1
F#:

2 4 3 4 Thematic Area I - Fugue

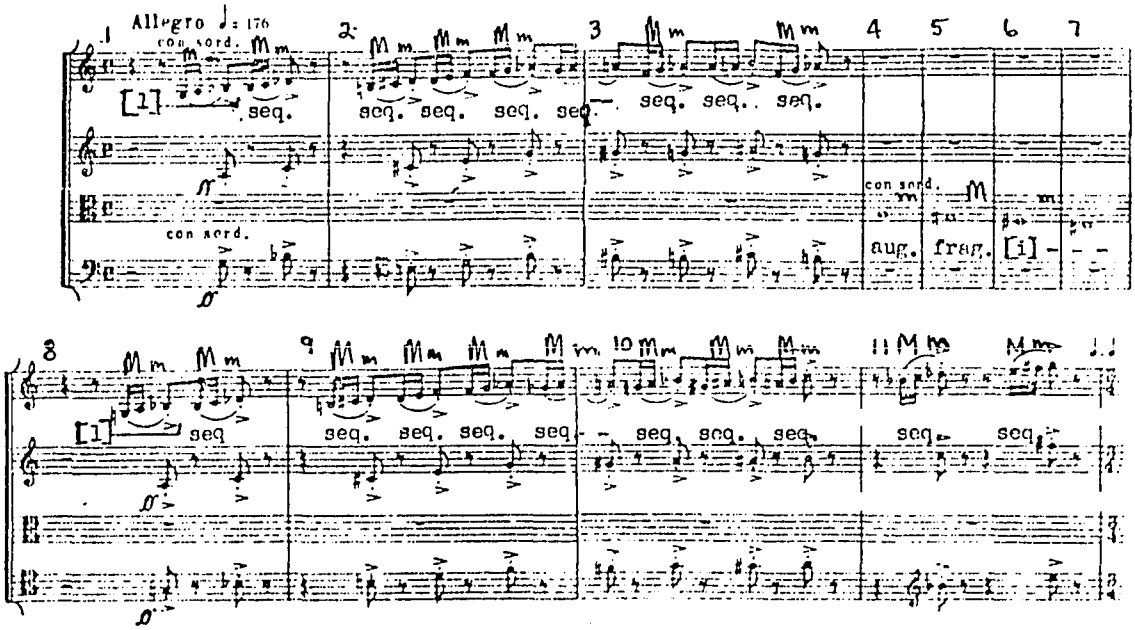
Exposition	Development	Codetta
12	57	170
F#:		

3 4 2 4 Thematic Area II - Waltz

A	B	A'	B
182	240	260	293
F#:		C:	F#:

3 4 2 4 Coda Section
[o] [b] [m] [c]
313
F#:

INTRODUCTION III



Every measure of the short introduction to movement three gives evidence of the alternating scalar pattern. Motive [1] also shares the ♫ ♩ rhythm and the three note grouping of motive [a]. These relationships are so aurally strong that the ear immediately expects to hear an inversion of the first violin contour of measures 1-3 of movement one. Although the expectation does not take shape, the composer has admirably made his point that this movement is but part of a unified whole.

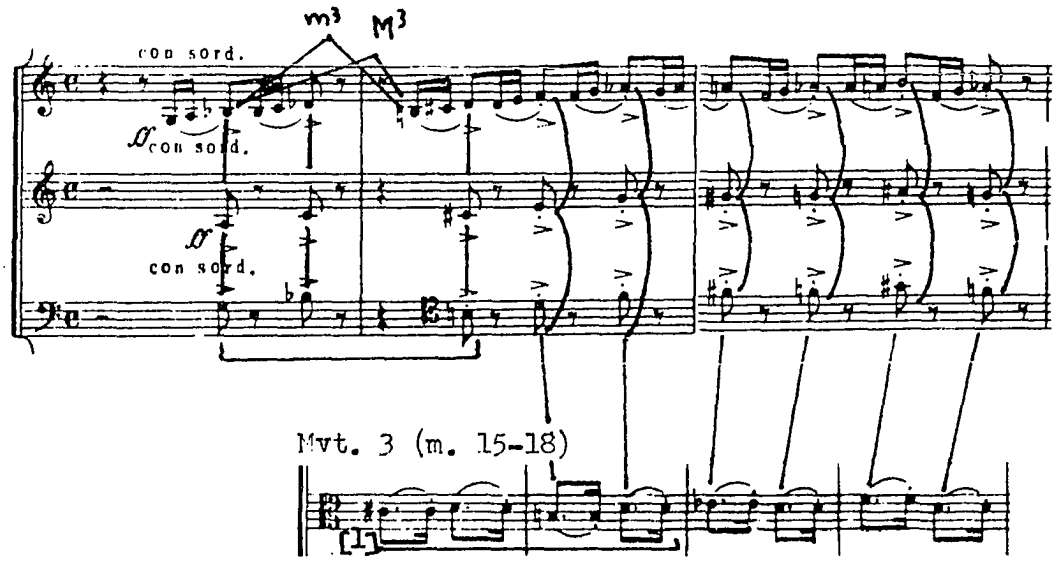
Of the first nine statements of motive [1] only numbers six and eight depart from the M2/m2 pattern. At measures 4-7 in the viola an enharmonic spelling of the last four pitches of movement two seems to remind the first violin that the scale pattern is to be alternating major and minor seconds. The first violin begins again and succeeds in filling two octaves with a sequence of motive [1] in the M2/m2 pattern.

The first three pitches in both the second violin and cello and the first three accented eighth notes in the first violin show expansion

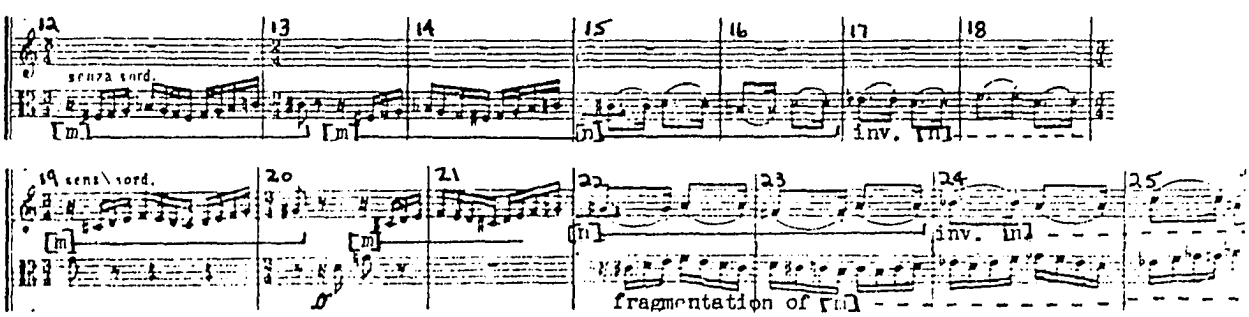
of a minor third to a major third. As shown in example 4:11 this pattern recurs in sequence with extension at measures 2-3 to form an anticipation of an important portion of the fugue theme.

Ex. 4:11

Mvt. 3 (m. 1-3)



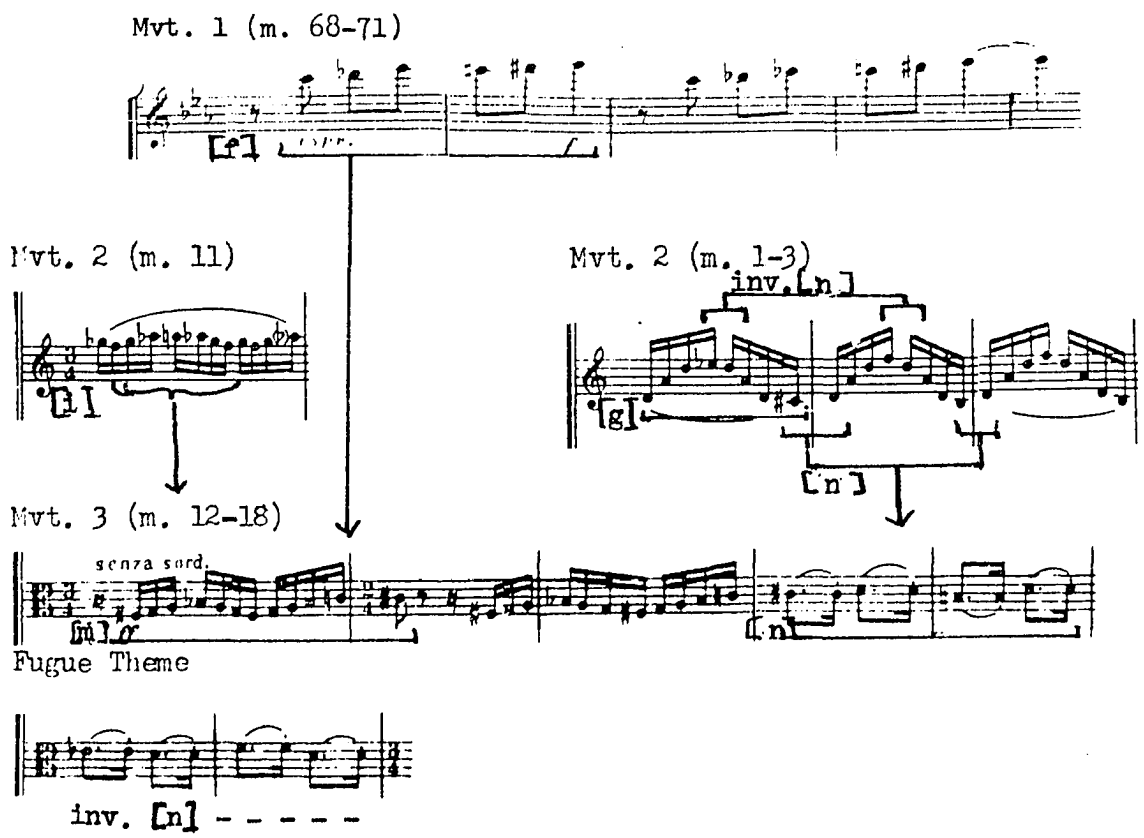
FUGUE THEME and ANSWER



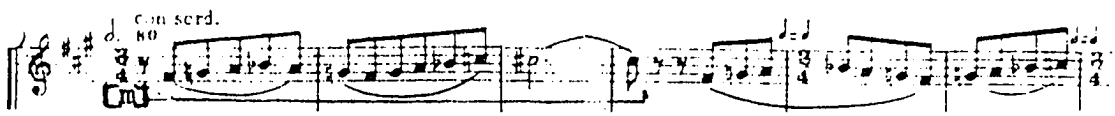
As shown on the line score the seven measure fugue theme grows from motives [m] and [n]. At measures 19-25 the second violin gives a real answer at the interval of a perfect fifth above.

Example 4:12 summarizes the emergence of the fugue theme and the transformation which will occur at the beginning of the waltz section of this movement where the fugue theme becomes theme IIa.

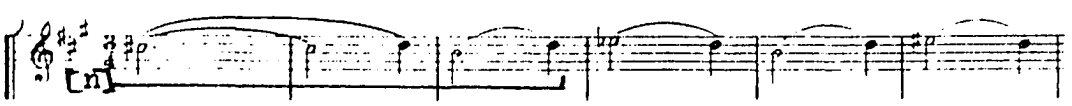
Ex. 4:12



Mvt. 3 (m. 182-193)



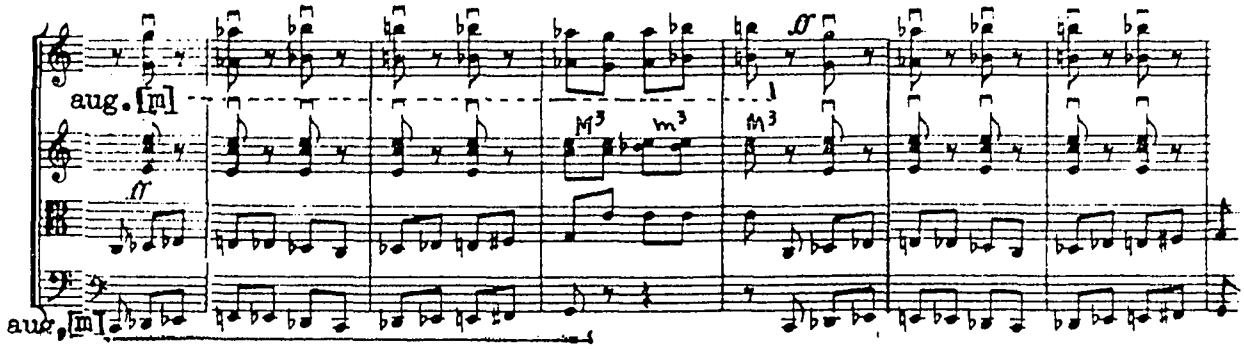
Transformation of Fugue Theme into theme IIa of the waltz section



An influence of the number three was observed in the exposition (m. 12-56): the fugue subject is stated three times and answered three times at the fifth above. The first seventy measures of the development (m. 57-126) displayed no new techniques of motivic manipulation directed toward unity. However, three of the more interesting contrapuntal techniques are described in example 4:13.

Ex. 4:13

Mvt. 3 (m. 66-72)

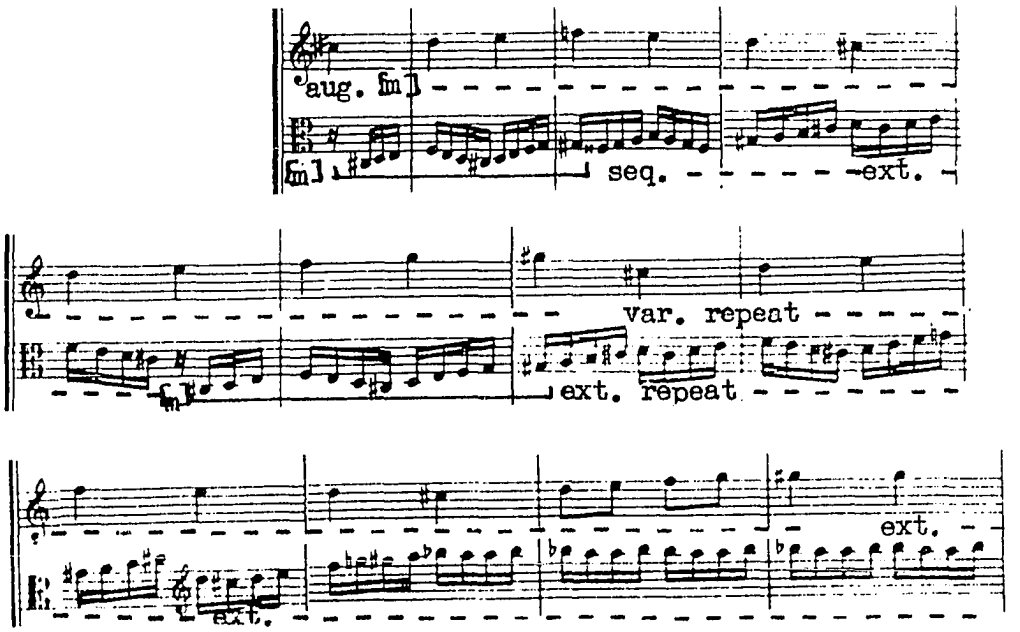


Measures 66-70 in the first violin show a doubly augmented form of the first ten notes of motive [m]; the first five notes of this augmentation are then repeated.

Measures 66-69 in the viola and cello show an augmentation of motive [m] which is repeated at measures 70-72.

Ex. 4:13 continued

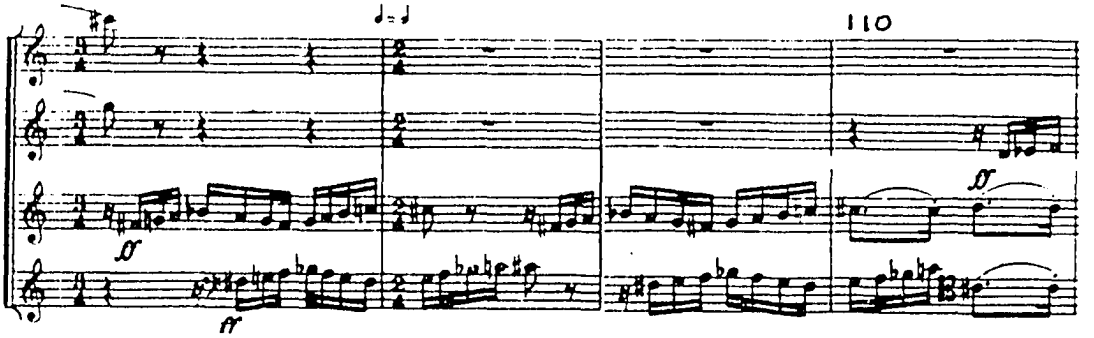
Mvt. 3 (m. 94-105)



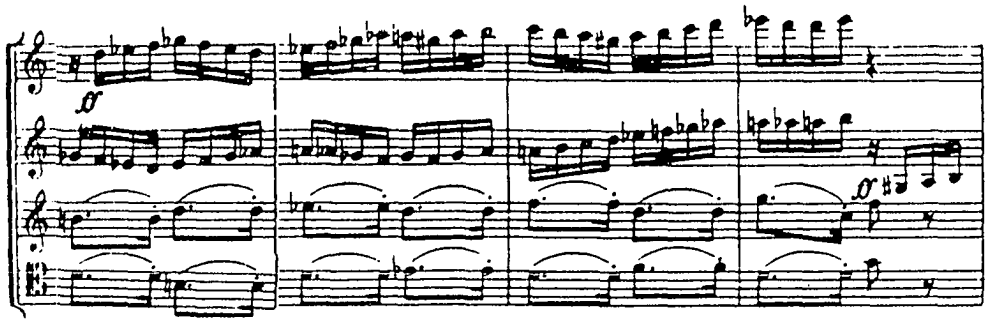
Measures 94-100 in the second violin show a doubly augmented form of motive [m] which is given a varied repeat at measures 100-105.

Measures 94-95 in the viola show motive [m]; the techniques of motivic manipulation are shown on the example.

Mvt. 3 (m. 107-114)



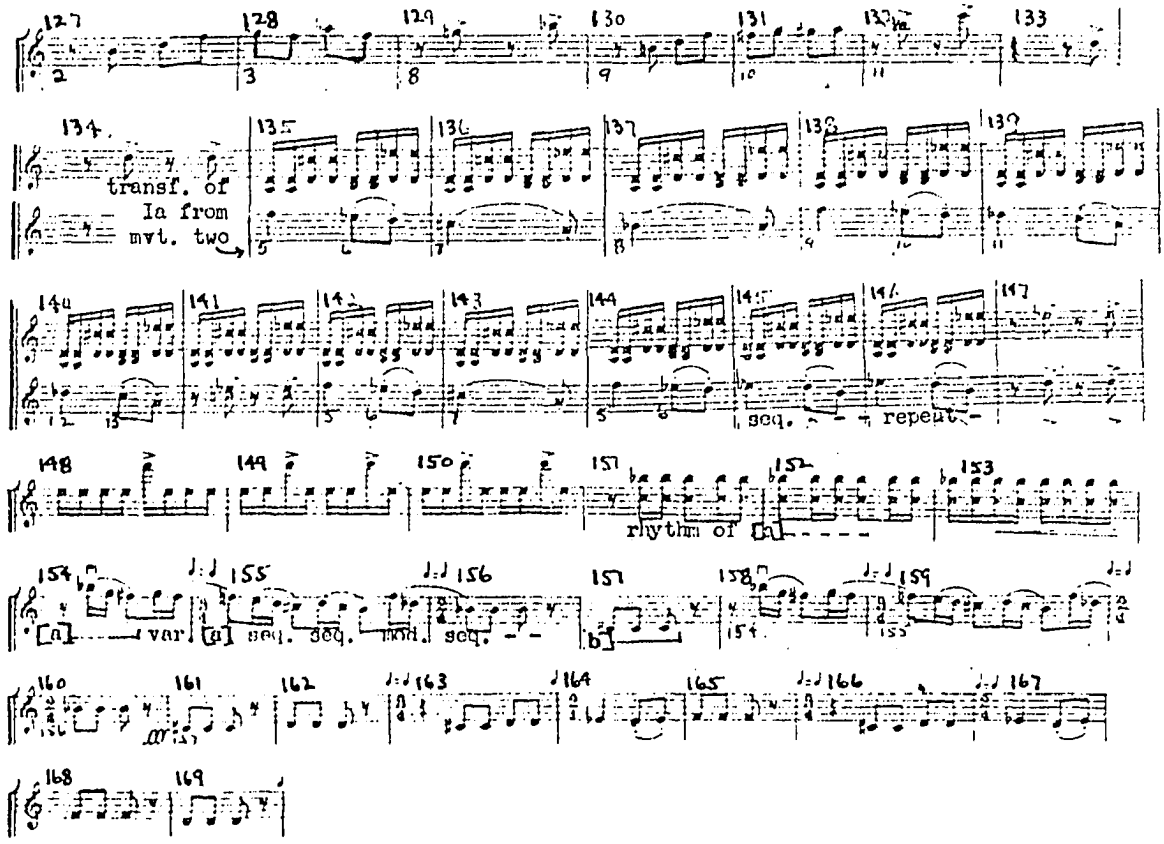
Ex. 4:13 continued



Measures 107-114 in the viola and cello show the fugue theme in a canon at the octave.

Measures 111-114 in the first violin show motive [m] followed by a sequence while the second violin has [m] which is then extended.

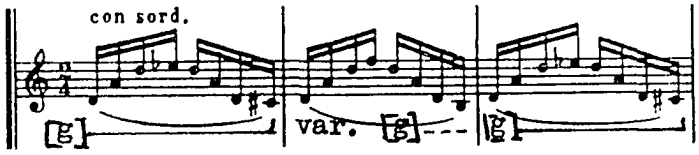
DEVELOPMENT (m. 127-169)



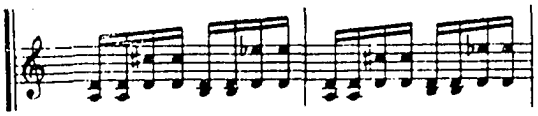
Measures 127-169 of the line score show recurrence of linear material from the introduction of movement three, theme Ia of movement two, and themes Ia and Ib of movement one. The first violin at measures 127-132 presents a diminution of the cello line at measures 2-3 and 8-11 of the introduction of movement three. The viola and cello at measures 135-146 have a transformation of a portion of theme Ia of movement two. This area includes a transformation of motive [g] and its varied recurrence from measures 1-2 of movement two. As shown in example 4:14 the pitch pattern of [g] and its varied recurrence are concealed in the second violin double stops of this transformation.

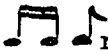
Ex. 4:14

Mvt. 2 (m. 1-2)



Mvt. 3 (m. 135-136)

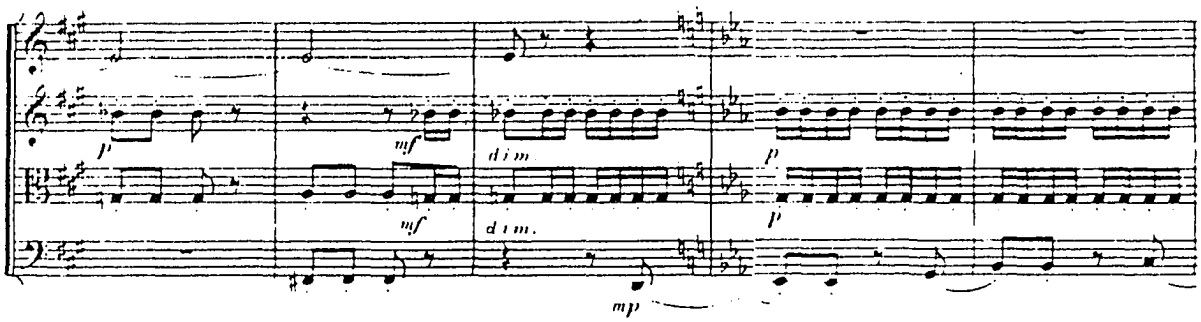


The rhythm of measures 151-153 is undoubtedly meant as a preparation for a return of the  rhythm of theme Ia of movement one which does recur at measure 154. However, as shown in example

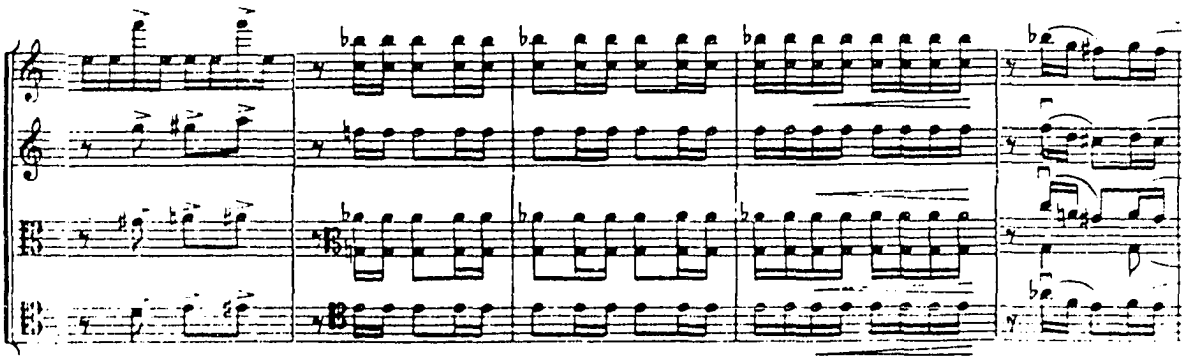
4:15 a similar technique was employed to move into an accompaniment of reiterated sixteenth notes at measures 43-44 which precede theme IIa of movement one. The ear is momentarily burdened with conflicting expectations: will theme Ia or theme IIa appear?

Ex. 4:15

Mvt. 1 (m. 42-46)



Mvt. 3 (m. 150-154)

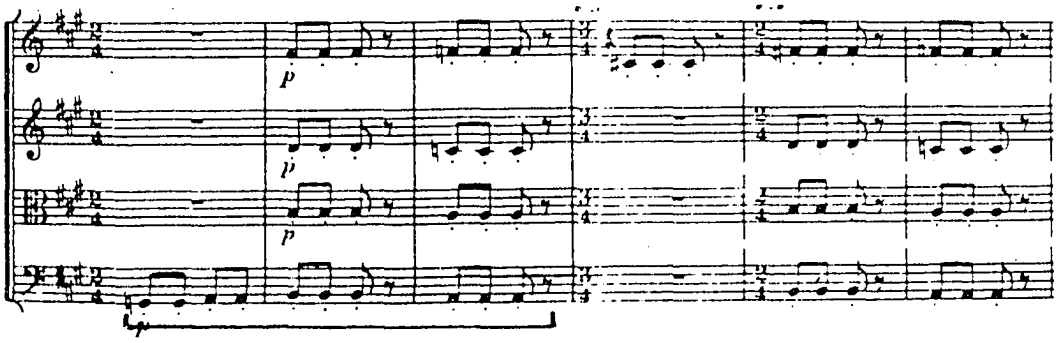


The question of conflicting expectations is quickly resolved at measure 154 where theme Ia of movement one is heard in all instruments. Measures 163-169 suggest the meter and rhythmic patterns of measures 8-13 of movement one. Measures 163-169 are also related to motive [d] by meter, rhythm, and repeated pitches. This same sort of area also

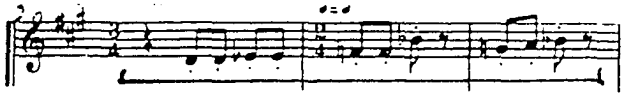
occurs in the coda movement one (m. 209). As shown in example 4:16 the germ of all of these areas lies in theme Ib of movement one.

Ex. 4:16

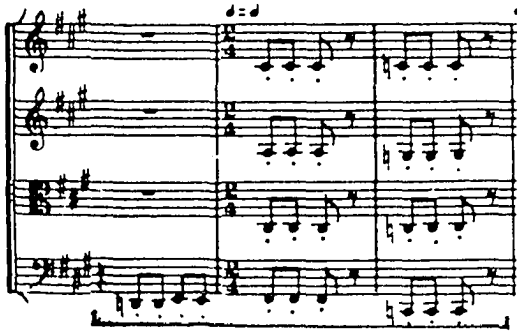
Mvt. 1 (8-13)



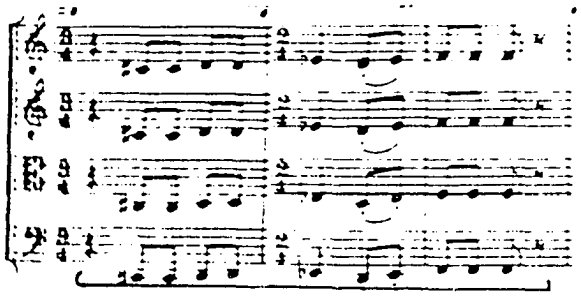
Mvt. 1 (29-31)



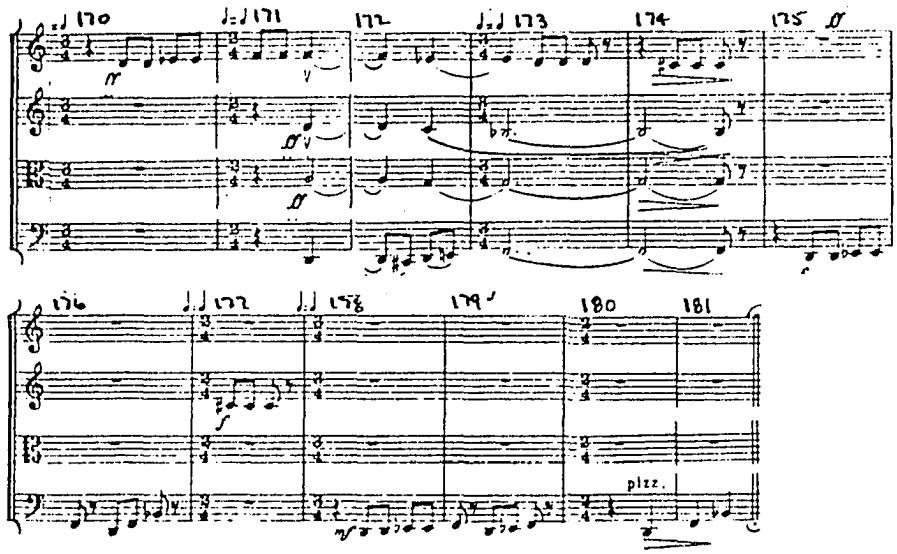
Mvt. 1 (m. 209-211)



Mvt. 3 (m. 163-165)



CODETTA

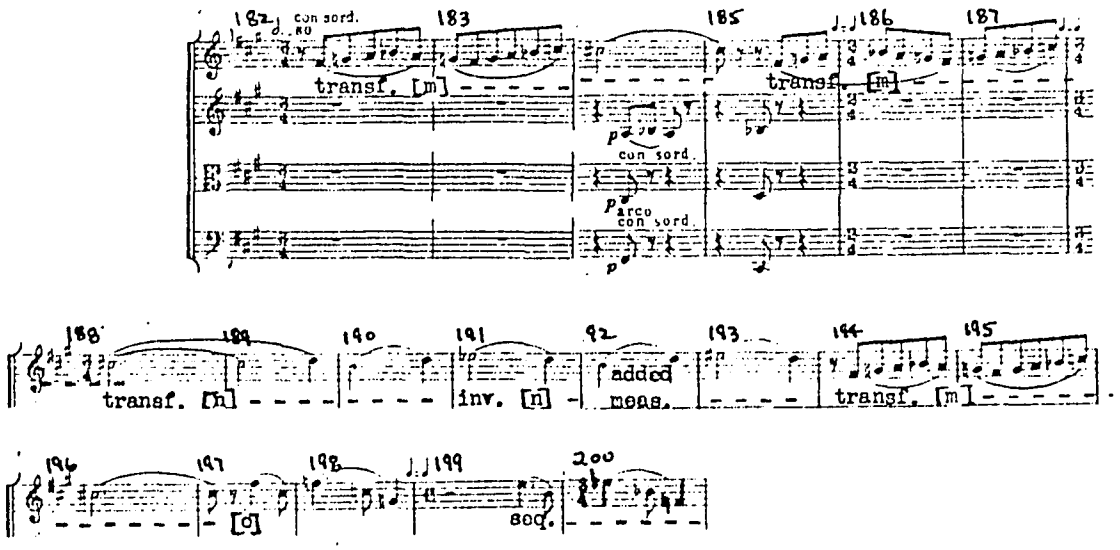


Due to the reduction of voices to a single line, the use of longer note values, and lower tessitura (m. 162-169) much of the energy of the developmental area has already been depleted at measure 170. Further application of these techniques completes the reduction of energy during the brief codetta whose material is drawn from the first movement. The first violin begins with a fragment of motive [d] which is followed by measures 204-208 of movement one presented in all voices. The cello closes this portion of the movement with variation and fragmentation of motive [d].

The fermata at the double bar and the contrasting mood of what follows at measure 182 effectively divide movement three into two shorter movements. The double bar occurs at the exact halfway point in the movement's 362 measures; each section is 181 measures in length. The time for performance of each half is two minutes and forty seconds, thus

they are truly equal portions. This change of pulse from primarily duple to primarily triple would seem to have been prepared by the switch from primarily duple meter to primarily triple meter at the approximate midway point of movement one (m. 104). In movement one the duple pulse returns at measure 169 and the mixed meters complete the movement; however, a psychological point has been made.

THEME IIa



With the arrival of theme IIa in the first violin at measure 182 both the ear and the intellect take satisfaction in the skillful transformation effected in the character of the fugue theme. The metamorphosis of the fugue theme and its transformation as theme IIa were shown in example 4:12 (p. 64).

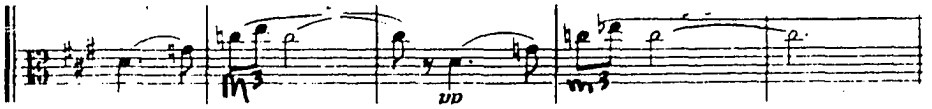
Motive [o] at measures 197-198 in the first violin is the last new linear material of this quartet. It claims immediate aural attention by its very newness and the hesitancy at measure 199. A careful

investigation revealed no previous contour which might be a logical source for either the arpeggiated perfect fourths or the characteristic ♩. ♪ ♩ waltz rhythm.

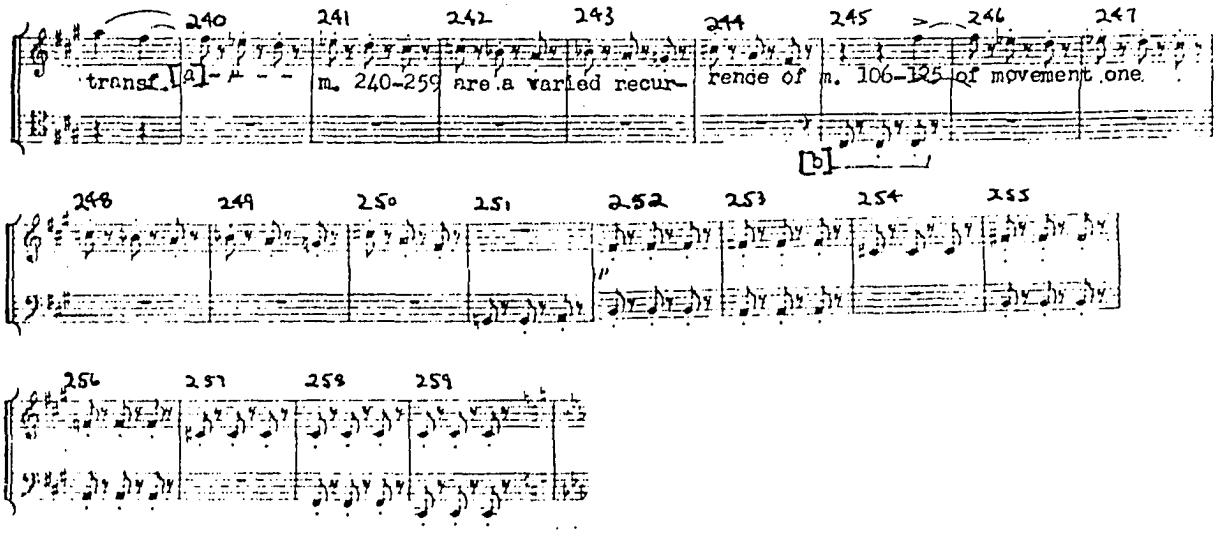
Example 4:17 shows measures 225-229 in the viola where an inverted fragment of motive [o] is decorated by interchange of a minor versus a major third.

Ex. 4:17

Mvt. 3 (m. 225-229)

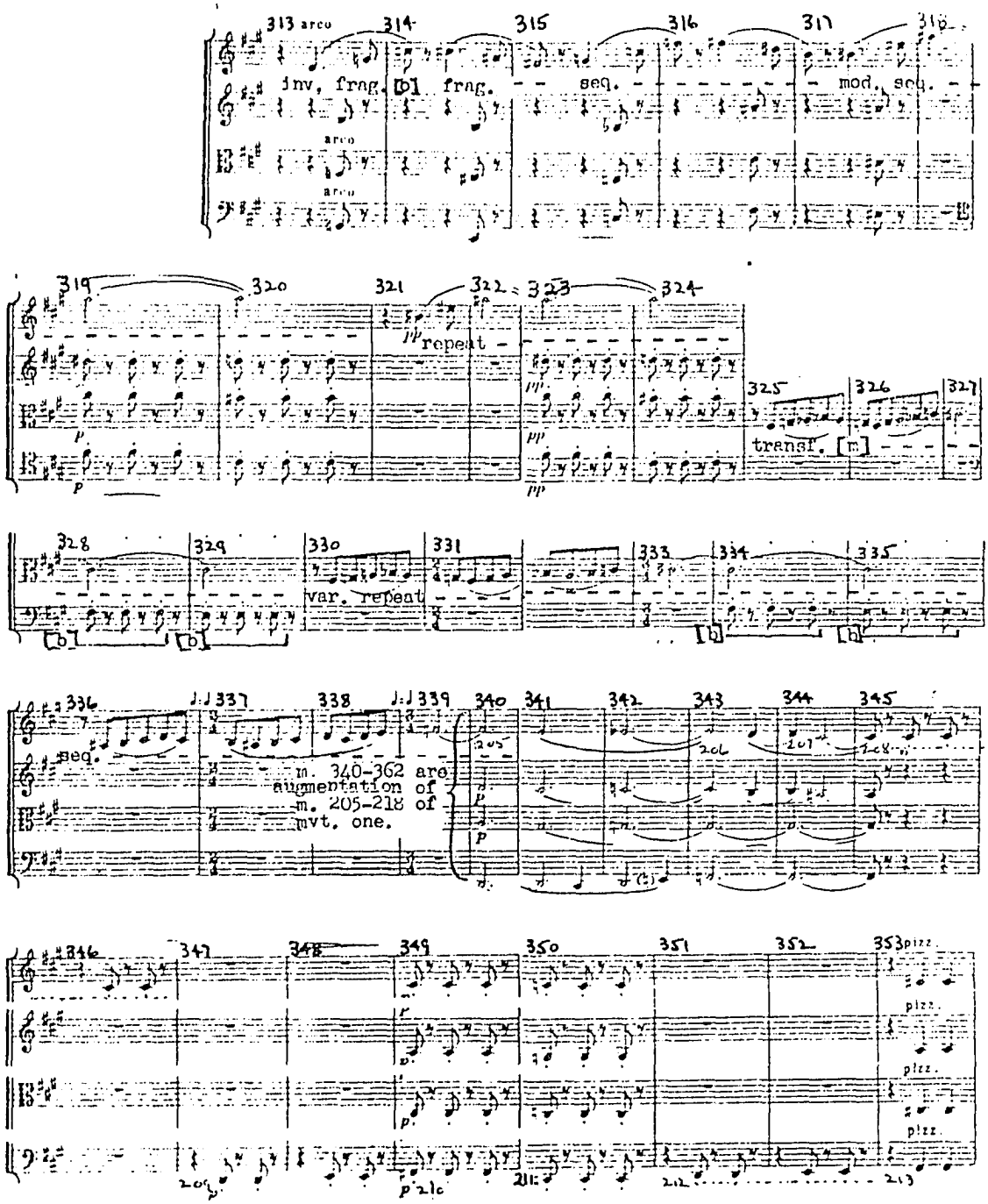


THEME IIb

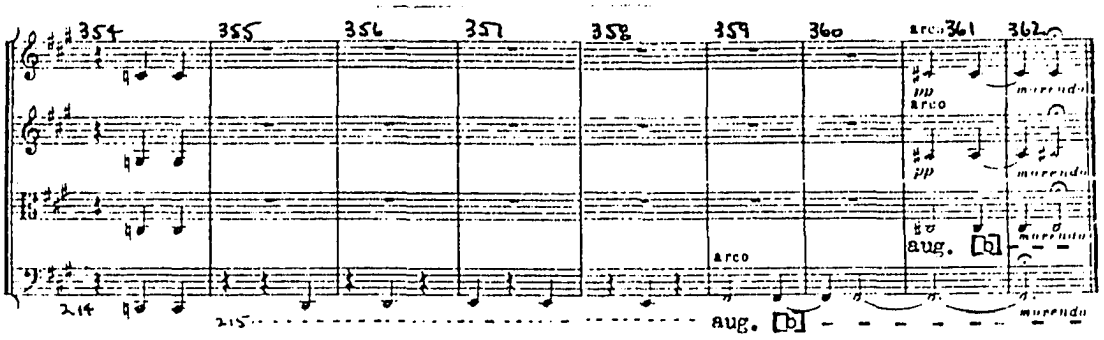


Theme IIb is a recurrence of the transformation of theme Ia from measures 106-125 of movement one. The original character of this transformation is but slightly altered by the use of arco as opposed to the original pizzicato of the movement one transformation. The original statement of theme Ia of movement one and its transformation at measures 106-125 of movement one were shown in example 4:2 (p. 42).

CODA


313 arco
314
315
316
317
inv. frag.
frag.
seq.
mod. seq.
arco
arco
319
320
321
322
323
324
pp repeat
325
326
327
transf. [m]
328
329
330
331
333
334
335
var. repeat
336
337
338
339
340
341
342
343
344
345
seq.
m. 340-362 are augmentation of m. 205-218 of mvt. one.
346
347
348
349
350
351
352
353
pizz.
pizz.
pizz.
pizz.

CODA continued



The coda effectively summarizes the most prominent sounds of the quartet. At measures 313-317 in the first violin the initial pitches of the sequence pattern outline the perfect fourth which is the prominent sound of motive [o]. The other three instruments are very much influenced by the tritone which originated in the transition area of movement one (m. 33-42). In addition to motive [o], motives [b], [m], and [c] are also prominent in the coda.

Measures 340-362 of this coda are an augmentation of the coda of movement one (m. 204-217); the corresponding measure numbers of movement one appear under the line score. Although the augmentation has destroyed the three measure phrasing of the original material, the influence of the number three is nonetheless preserved by motive [b]. The final sound of this quartet is an augmentation of motive [b] in all instruments.

Summary

As investigation of movement three began it was found that the alternating scalar pattern implied by motive [a] and crystallized by [c] asserted itself immediately in motive [1]. Additionally, [1] like [a] is a three note motive; [1] could be considered a modified inversion

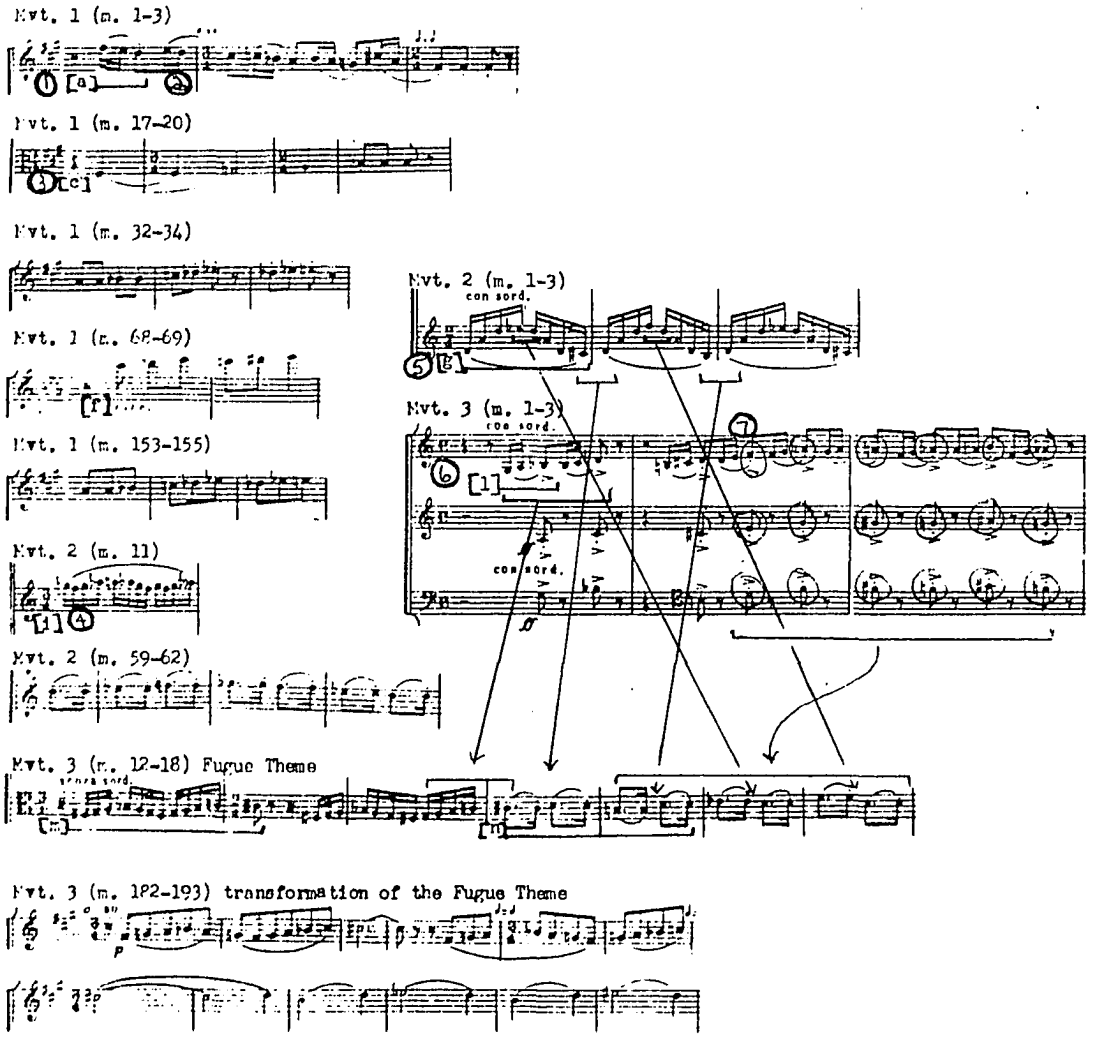
of [a]. Motive [m], the lead motive of the fugue theme, also articulates the alternating scalar pattern.

In the exposition section of the fugue, the theme is stated three times and answered three times at the fifth above. The six pitches of motive [m] are divisible by three to yield a product of two; [m] is stated twice at the head of each subject and answer. The number three is vividly highlighted at the beginning of the waltz section where the meter becomes predominately triple. The influence of the number three as originally featured in themes Ia and Ib of movement one is continued here as these linear materials recurred. A mixture of duple and triple meters is a prominent characteristic of the thematic materials of this movement.

With the exception of motive [o] it was observed that there is no new prominent linear material in movement three. The emergence process of the prominent contours of movement three is summarized in example 4:18.

Ex. 4:18

Emergence of the fugue theme of movement three and its subsequent transformation as theme IIa of movement three.



① - Motive [a] implies an alternating scalar pattern: f#-(f)-e^b-d.

② - The sequence construction which follows the first statement of [a] describes an alternating scale from the F# tonal center: f#-g-a-b^b-c-d^b-e^b-e.

③ - Motive [c] articulates the first four pitches of [m].

④ - Motive [f] presents the m2/M2/m2 pattern of [c] in a transposition which is then followed by five more notes to create what will be the first eight notes of motive [m].

⑤ - The neighbor tones of motive [g] anticipate [h] and its inversion.

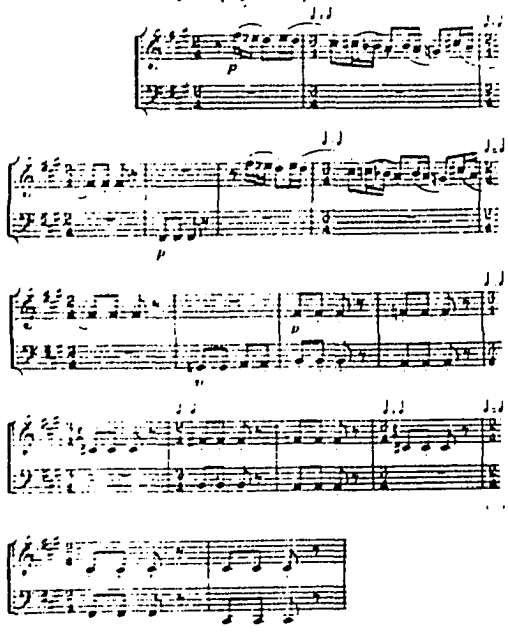
⑥ - Motive [l] and its sequence articulate the last five pitches of [m].

⑦ - The accented notes in all instruments describe the interval pattern of a portion of motive [h] and its inversion.

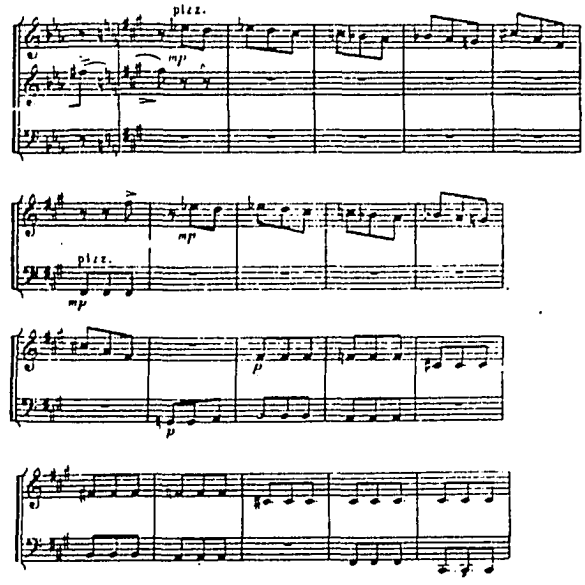
Ex. 4:18 continued

Transformations of theme Ia and Ib of movement one.

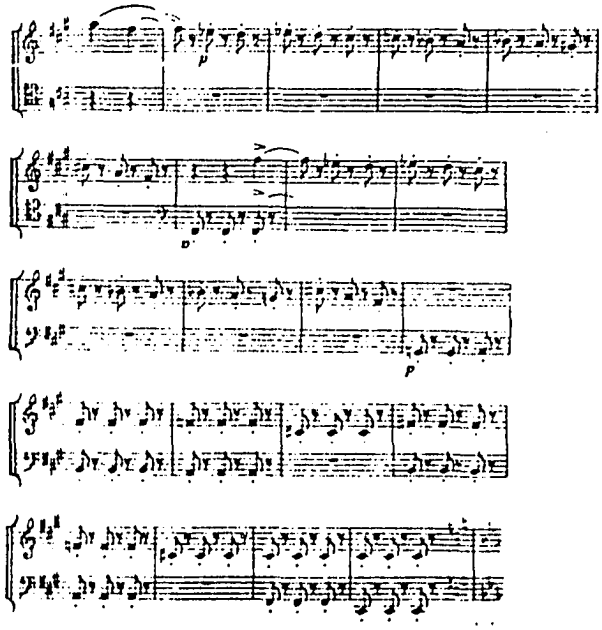
Mvt. 1 (m. 1-16) Themes Ia and Ib.



Mvt. 1 (m. 105-125) Transformation of Themes Ia and Ib.



Mvt. 3 (m. 239-259) Theme IIb: a transformation of themes Ia and Ib of movement one.

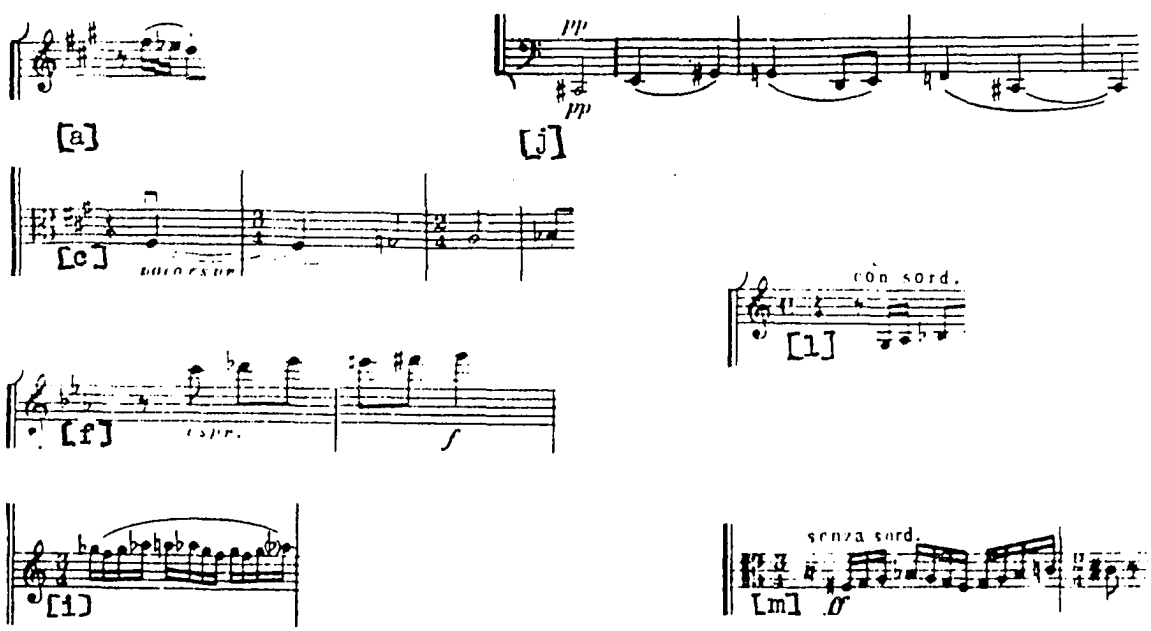


Summary of Unifying Factors Among Motives
and Themes of the Seventh Quartet

During this investigation of the seventh quartet, attention was directed numerous times to the on-going influence of the three most prominent characteristics of theme Ia of movement one: (1) the scalar pattern of alternating minor and major seconds, (2) the importance of the number three, and (3) the mixture of duple and triple meters. The alternating scale was implied and the number three was articulated by the quartet's first aural stimulus: motive [a].

The detailed analysis has shown that the alternating scale is a primary source of linear unity among the thematic materials of this composition. Motives which display this scalar pattern are prominent in all movements and are shown in example 4:19.

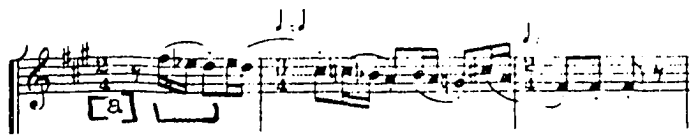
Ex. 4:19



In addition to its influence upon the contour of a number of prominent motives, the alternating pattern was observed as the scalar basis of a number of longer contours. The lines shown in example 4:20 have been selected as being among the more subtle manifestations of the influence of the alternating scale within longer contours.

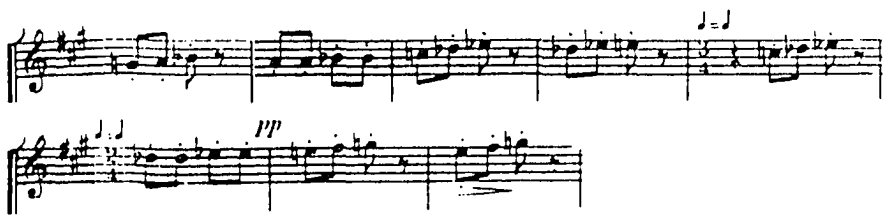
Ex. 4:20

Mvt. 1 (m. 1-3)



The first phrase of theme Ia grows by means of variation, sequence, and extension of motive [a]. All pitches except the d belong to an alternating scale constructed from the F# tonal center: f#-g-a-b^{b}-c-c#-d#-e.

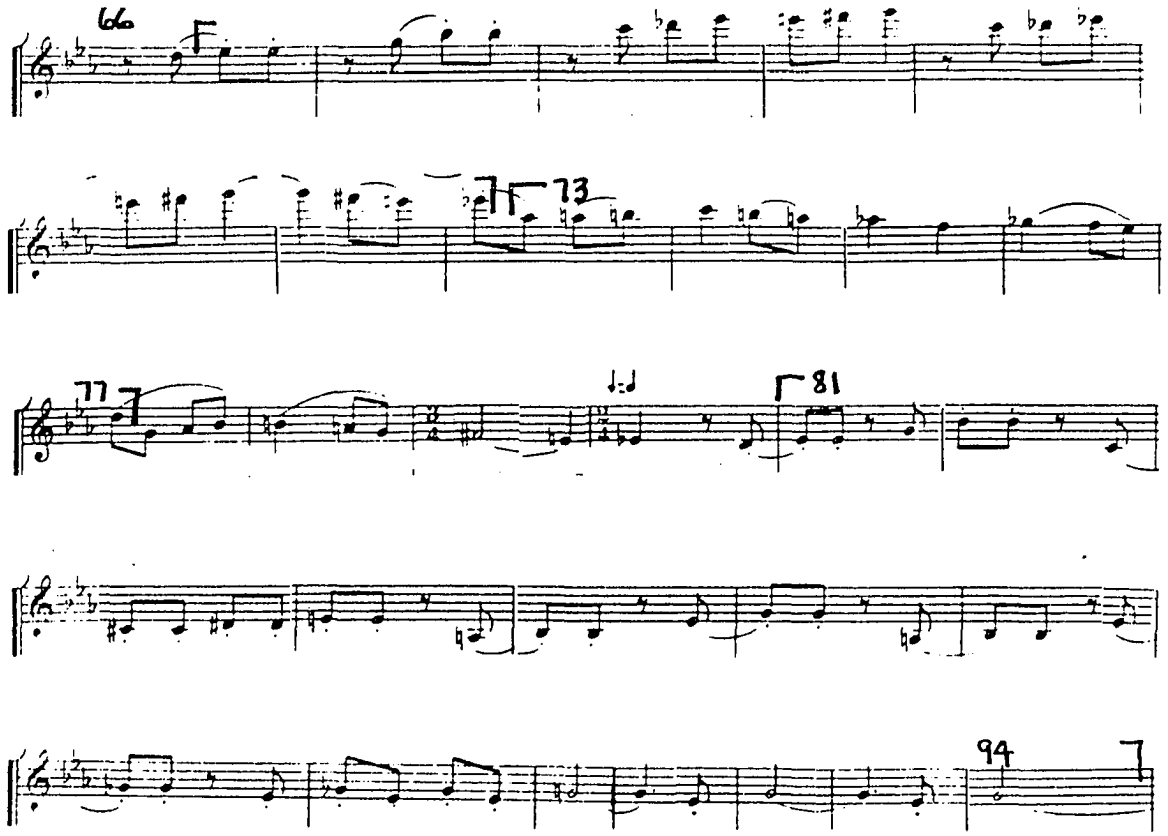
Mvt. 1 (m. 31-38)



An ascending line fills an octave with an alternating scale spelled from the first pitch g: g-a-b^{b}-c-d^{b}-e^{b}-e-f#.

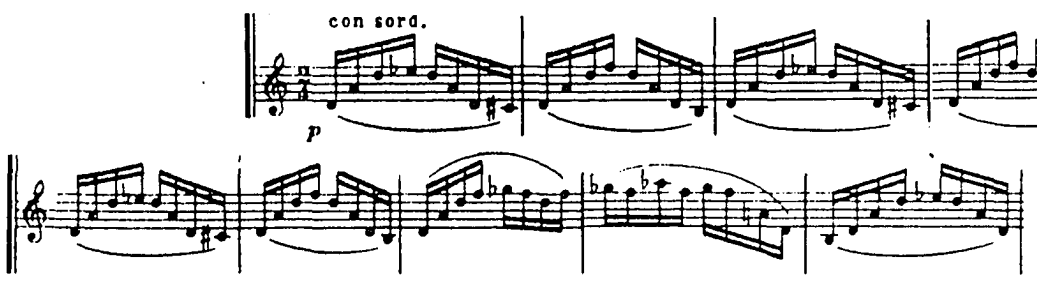
Ex. 4:20 continued

Mvt. 1 (m. 66-94)



Measures 66-73 are constructed of the alternating scale from the E^b tonal center: e^b-e-f#-g-(a)-b^b-c-d^b. Measures 73-77 are an alternating scale from a^b: a^b-a-b-c-d-e^b-f-g^b. At measures 77-80 a mixture of these two scales acts as a miniature retransition to motive [e] at measure 81. Measures 81-94 return to the alternating scale from E^b.

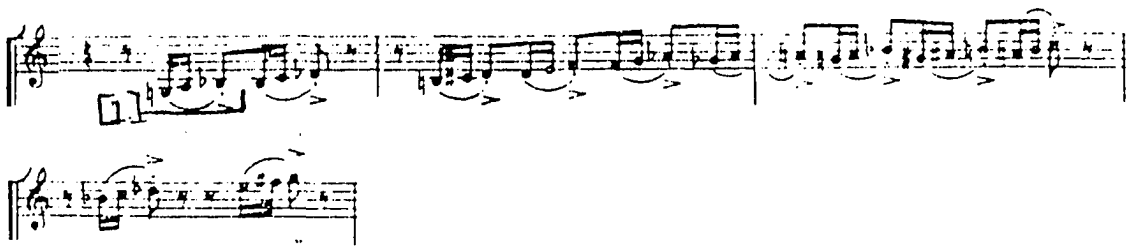
Mvt. 2 (m. 1-9)



An accompanimental line moves within an alternating scale. The c# of measures one, three, and five does not belong to the pattern: d-e^b-f-g^b-a^b-a-b-c.

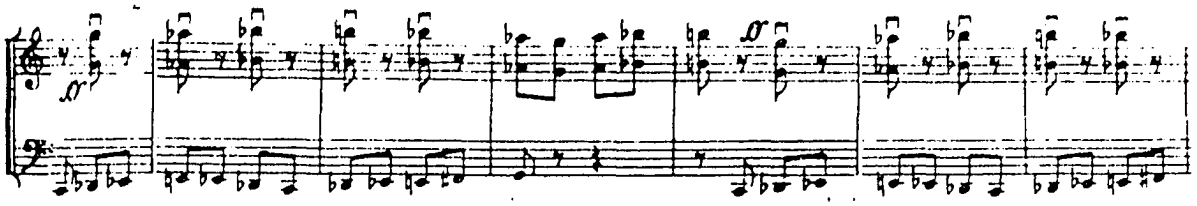
Ex. 4:20 continued

Mvt. 3 (m. 8-11)



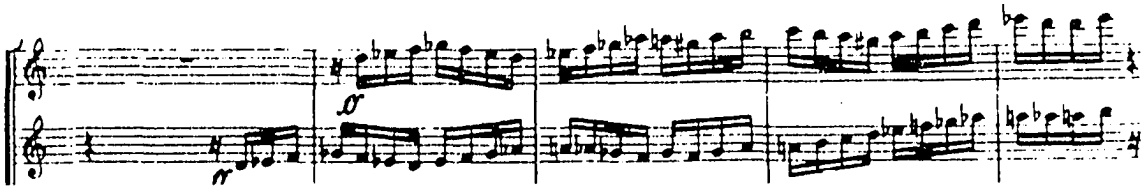
Motive [1] constructs a line by sequence of its alternating scalar pattern.

Mvt. 3 (m. 66-72)



Two different alternating patterns are described by the first violin and cello: g-a^{b}-b^{b}-b and c-d^{b}-e^{b}-e-f#-g.

Mvt. 3 (m. 110-114)

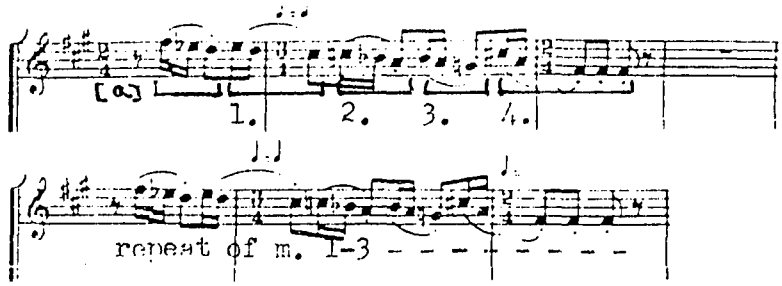


Two voices display an alternating scale in free imitation: d-e^{b}-f-g^{b}-a^{b}-a-b-c.

Recurrence of an initial motive either immediate or in close proximity is a characteristic which was observed in six of the eight themes of this quartet. These themes are shown in example 4:21.

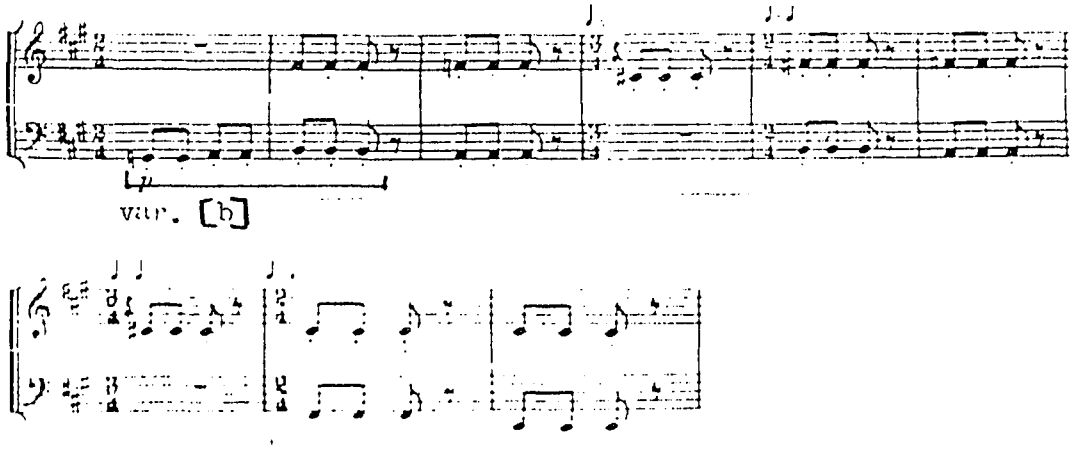
Ex. 4:21

Mvt. 1 (m. 1-7) - theme Ia



The first recurrence is a variation of the opening motive [a], the second and third recurrences are in sequence of the first, the fourth recurrence is varied by intervallic expansion and by extension. Measures 5-7 are a recurrence of measures 1-3.

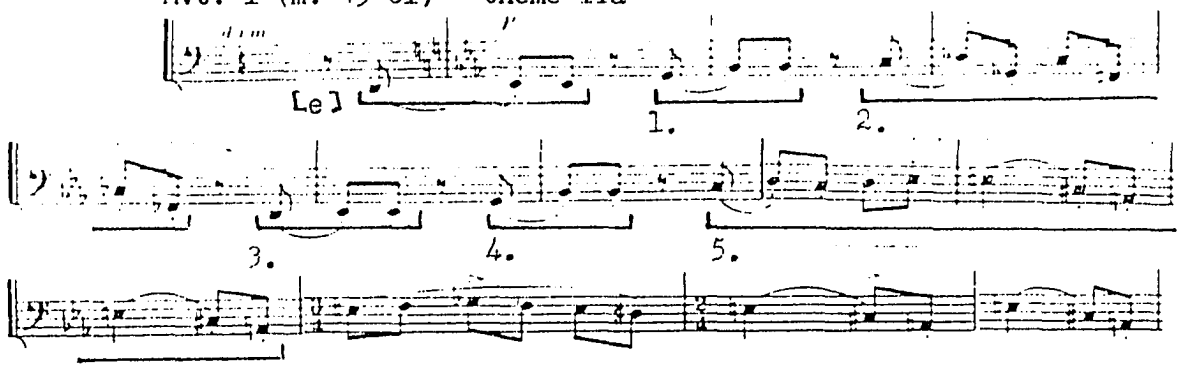
Mvt. 1 (m. 8-16) - theme Ib



Theme Ib begins with motive [b] varied by added pitches at its beginning. The remainder of Ib is a repetition of motive [b].

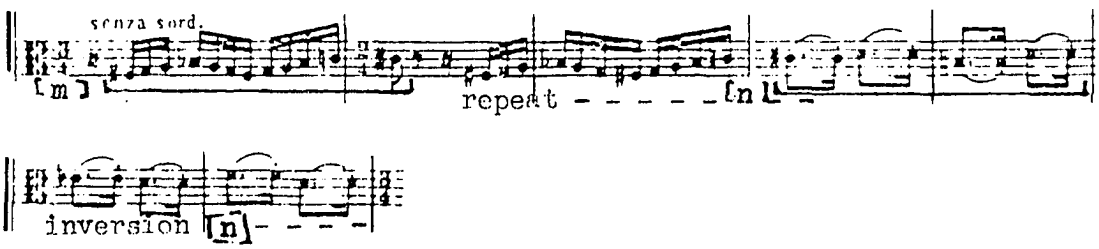
Ex. 4:21 continued

Mvt. 1 (m. 45-61) - theme IIa



The first recurrence of motive [e] is varied by intervallic expansion, the second recurrence is varied by a change of direction for its final pitch and by extension, the third and fourth recurrences are duplications of [e] and its first recurrence, the fifth recurrence is varied by change of direction for the final note and by extension.

Mvt. 3 (m. 12-18) - fugue theme



The recurrence of motive [m] is a repeat while the recurrence of [n] is an inversion.

Themes IIa and IIb of movement three are transformations of the fugue theme and theme Ia of movement one respectively. The recurrence techniques of the third movement transformations correspond to their original statements.

Eleven of the fifteen prominent motives of the seventh quartet are confined within the range of a perfect fifth or less. Of the remaining four motives, two have a range of a minor sixth, one

encompasses a major seventh, and one has a range of a major ninth. Eight of the fifteen motives move in totally conjunct motion while three may be considered basically conjunct in that they contain only one skip. Only motive [o] moves in totally disjunct motion; the remaining three motives may be considered as basically disjunct in that they tend to be dominated by skips while containing some conjunct motion.

Unity of primary linear materials is also served by instrumentation or timbre, for the violin sound has been selected for eleven of the total of eighteen initial statements and/or recurrences of the prominent themes. The cello has five initial statements and/or recurrences of prominent themes, the viola has the initial fugue theme; the initial statement of theme IIa of movement two is presented in octaves by the viola and cello. Theme Ib of movement one has been omitted from these statistics for it is more a rhythmic texture woven by the four instruments than a "theme" as the term is commonly used. This preference for violin timbre also holds true for the exposition and extensive development of the fugue: eight of the eleven recurrences of the fugue theme are assigned to either the first or second violin.

All of the themes of this quartet are initially stated either unaccompanied or with only the most minimal accompaniment. This contributes to an easy accessibility of the thematic materials. This accessibility facilitates recall of the linear material and assists the ear in recognition of the recurrences of motives and themes as they delineate the formal structure.

Although mixed meter was found to be a prominent characteristic of all movements, only motives [c] and [d] display a change of meter.

Of the remaining thirteen motives, nine are in duple meter and four are in triple meter. Further investigation of the prominent motives to determine metric placement (accented versus unaccented) disclosed that seven begin on the first beat of the measure while eight begin with an anacrusis. With the exception of motives [h] and [k], all of the motives are short. The four measure length of [h] and [k] plus their comparatively long temporal span caused by the lento tempo of movement two makes them considerably longer than the other motives in this quartet.

The Processes of Anticipation and Emergence

As was initially stated, the three most important aural events with regards to unity in this composition are prominent characteristics of theme Ia of movement one. These events are: (1) the use of the alternating scale, (2) the importance of the number three, and (3) the mixed duple and triple meters. Of these, the alternating scale and the mixed meter are prominent features of all movements and both participate in anticipation and emergence functions.

Detailed investigation of the line score has revealed anticipatory and emergence functions of linear material at all architectonic levels. Among the most interesting of these has been the emergence process which leads to the fugue theme of movement three. Example 4:18 (pp. 77-78) documents the linear contributions made by motives [a], [c], and [f] of movement one, motive [i] of movement two, and motive [l] of movement three to the metamorphic emergence of the fugue theme and subsequently to the waltz transformation of the fugue theme. Nor is

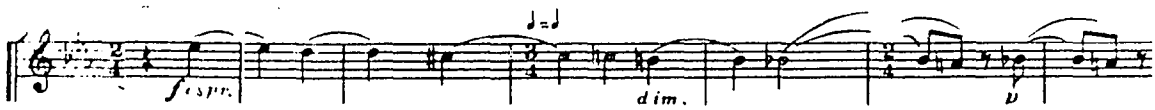
it only the alternating scalar pattern and the shape of this line, for these two lines are one and the same contour, which have undergone a process of emergence. The change from the basically duple meter of the fugue to the predominately triple meter of the waltz transformation emerges from the mixed duple and triple meters which are so characteristic of this quartet as a whole and which arise with measures one and two of movement one which are duple and triple meter respectively.

At the next highest architectonic level are those anticipations between adjacent movements. This quartet contains one notable example. As shown in example 4:22 the pitch frame, descending contour, and mood of motive [h] of movement two are all prepared by two prominent contours of movement one.

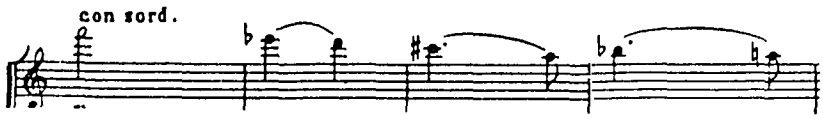
Ex. 4:22

Mvt. 1 (m. 1-3)

Mvt. 1 (m. 97-103)



Mvt. 2 (m. 5-8)

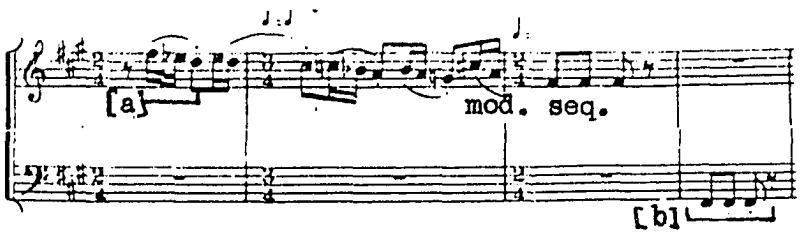


[h]

Perhaps of less importance to structural unity but of no less interest as stage setting devices are the anticipations shown in example 4:23. These anticipations foretell the appearance of motives and themes immediately before or in close proximity to their original statements or structurally important recurrences.

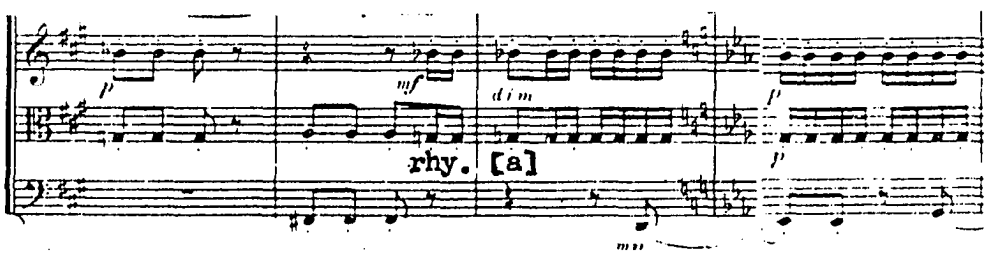
Ex. 4:23

Mvt. 1 (m. 1-4)



The extension of a modified sequence of motive [a] anticipates motive [b].

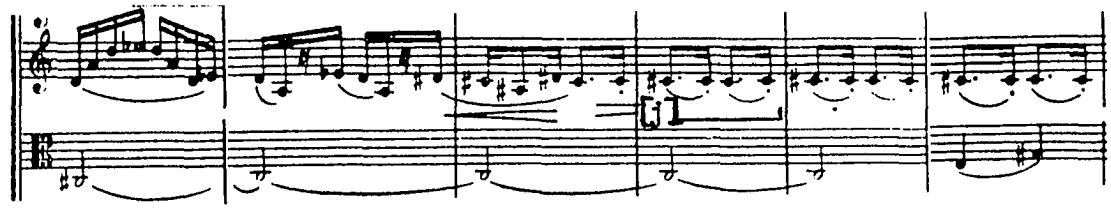
Mvt. 1 (m. 43-46)



At measure 43 the second violin and viola anticipate the pitches of the accompaniment of theme IIa (m. 46). At measure 44 the same two instruments articulate the rhythm of motive [a] which yields the sixteenth notes which accompany theme IIa.

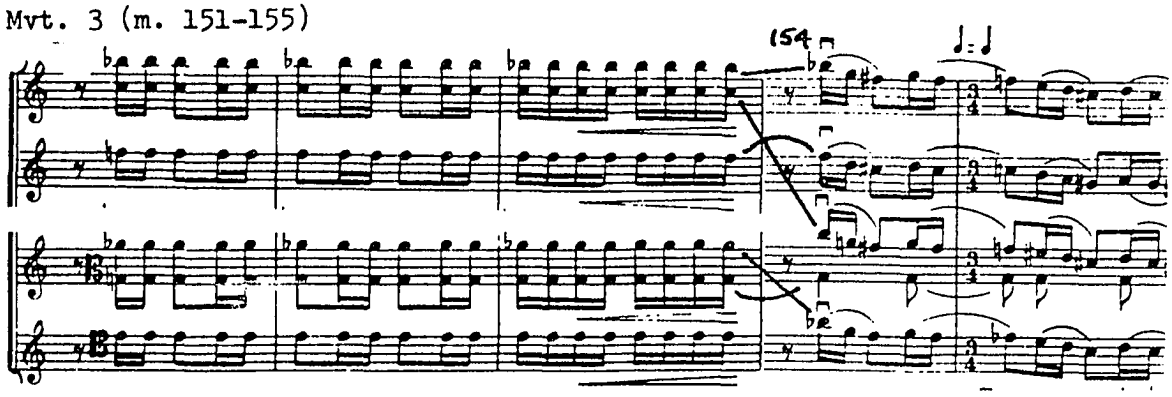
Ex. 4:23 continued

Mvt. 2 (m. 32-37)



The second violin at measures 33-34 anticipates the rhythm of motive [j] while the viola prepares for the new C# tonal center by means of a c# pedal.

Mvt. 3 (m. 151-155)

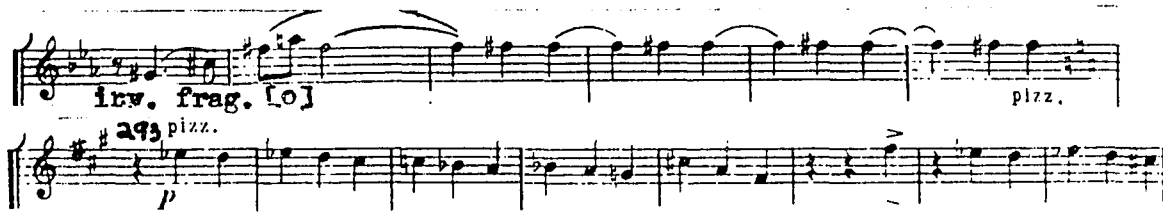


The ♩♩ ♩ rhythm at measures 151-152 causes an expectation for a return of either theme Ia of movement one or the introduction to movement three. At the same time these measures show the same basic procedure that occurred at measures 43-44 of movement one where the rhythm and pitches of the accompaniment of theme IIa were prepared (see the second entry of example 4:24). The momentary uncertainty thus caused by the conflict of expectations is resolved at measure 154 in favor of theme Ia of movement one.

At measure 153 the top four pitches (a^b-c-f-b^b) of the repeated vertical structure anticipate the beginning pitches of the four lines of the recurrence of theme Ia of movement one. The g in the viola continues as a pedal tone.

Ex. 4:23 continued

Mvt. 3 (m. 287-300)



An inverted fragment of motive [o] is extended to form an f# pedal tone which prepares for the F# tonal center of a recurrence of a transformation of theme Ia of movement one at measure 293.

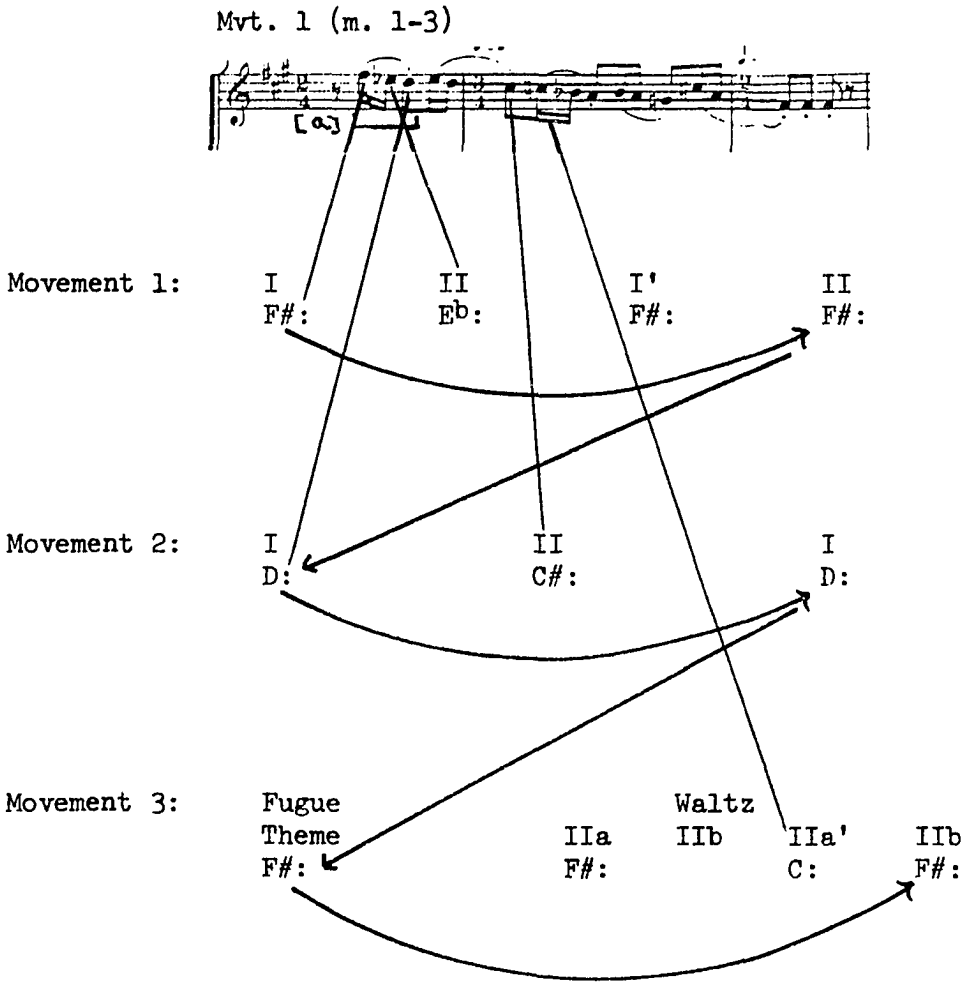
Non-Linear Relationships

A careful investigation of the score has revealed few apparent non-linear relationships. Although involvement of prominent motives in sequence construction, entrances of imitation, vertical structures, and tonal centers is limited, this involvement does contribute to structural unity.

The F#-D tonal frame of the three movements emerges from the first aural stimulus of this quartet: motive [a] whose pitch frame is f#-d. When the remaining prominent tonal centers are combined with f# and d the first five pitches (f#-e^{b}-d-c#-c) of theme Ia of movement one emerge. Also noted are the minor third (F#-E^{b}) versus the major third (F#-D) interplay of the prominent tonal centers of movements one and two, and the tritone relationship (F#-C) of the prominent tonal centers of movement three. This is the same tritone which emerged at measures 33-42 of movement one and which occurs as the prominent sound of the bass line (c-d-e-f#) as well as of the root relationship of the vertical structures (f#ac# and ceg) which occur in the final measures of move-

ments one and three. The final measures of movements one and three are shown on pages 44 and 74-75 respectively of this study.

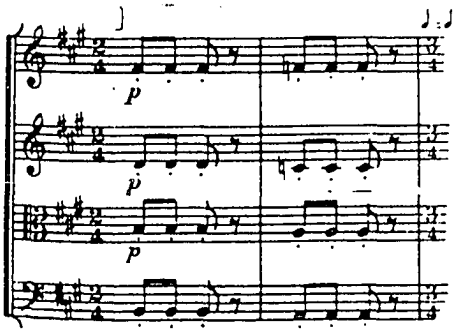
PROMINENT TONAL CENTERS OF THE SEVENTH QUARTET



This investigation disclosed little apparent involvement of motives in vertical structures: the preponderance of vertical structures in this quartet may be identified as tertian in origin and could be constructed from any one of several scale bases. However, since the alternating scalar pattern is very prominent in this composition a search was made for vertical structures which show a likely influence of that pattern. Evidence of involvement of the alternating scale in vertical structures is documented in examples 4:24 and 4:25.

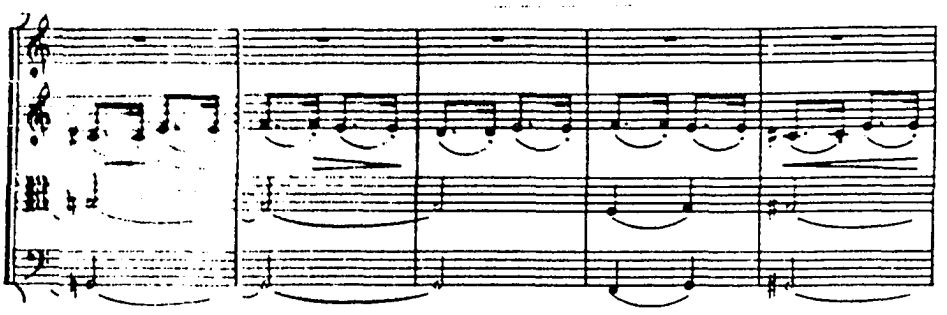
Ex. 4:24

Mvt. 1 (m. 9-10)

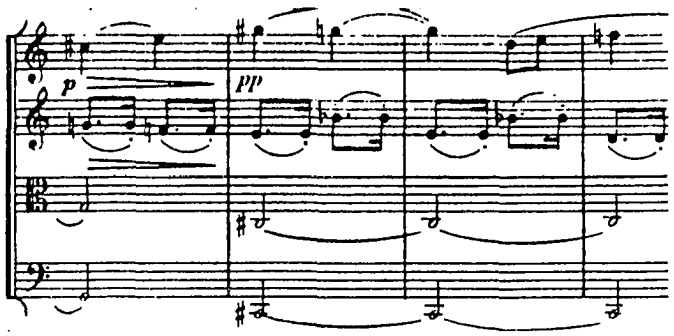


Possible scale basis: b-c-d-(eb)-f-f#-(g#)-a.

Mvt. 2 (m. 48-56)

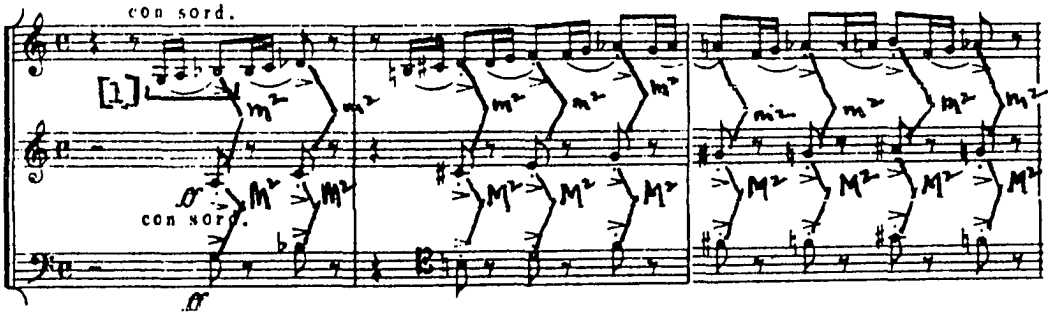


Ex. 4:24 continued



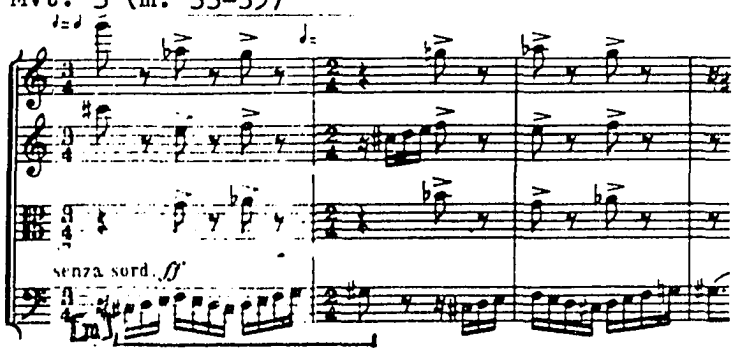
Scale basis from the C# tonal center: c#-d-e-f-g-g#-a#-(b).

Mvt. 3 (m. 1-3)



The M2/m2 pattern of motive [1] is used to construct the accompanying vertical structures. The alternating pattern is used as a vertical interval pattern between voices rather than as a consistent scalar basis.

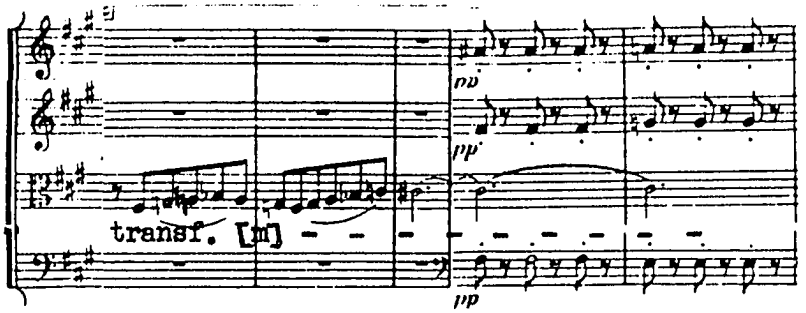
Mvt. 3 (m. 33-35)



Motive [m] of the fugue theme is accompanied by vertical structures formed from an alternating scale constructed from the lowest pitch c#: c#-d-e-f-g-g#-a#-(b).

Ex. 4:24 continued

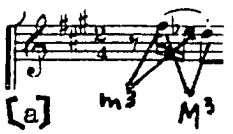
Mvt. 3 (m. 325-329)



The alternating scale implied in this transformation of motive [m] (f#-g-a-b^{b}-c-c#-d#-e) is used to construct the accompanying vertical structures.

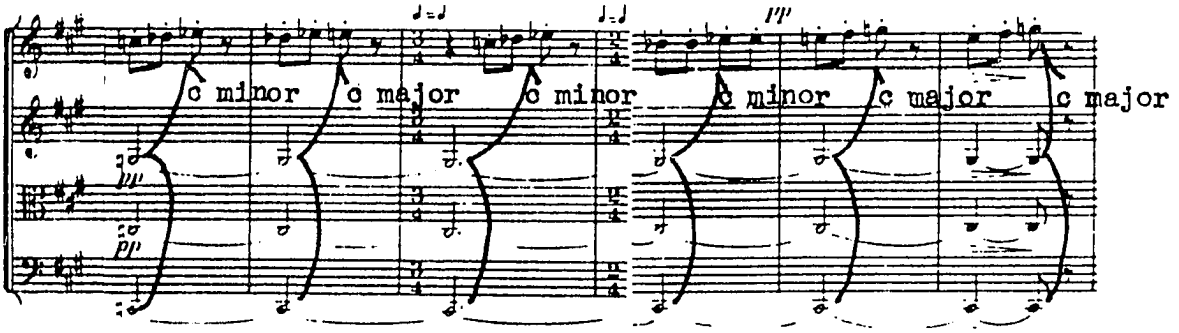
Ex. 4:25

Mvt. 1 (m. 1)



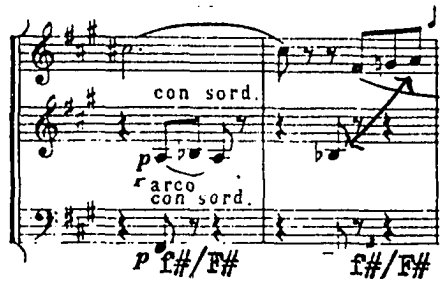
A prominent characteristic of the alternating scale is displayed by motive [a]: an interplay of minor versus major thirds. Motive [a] is basically a minor third which expands to a major third. The influence of this characteristic of the alternating scale is found in the following excerpts.

Mvt. 1 (m. 33-38)

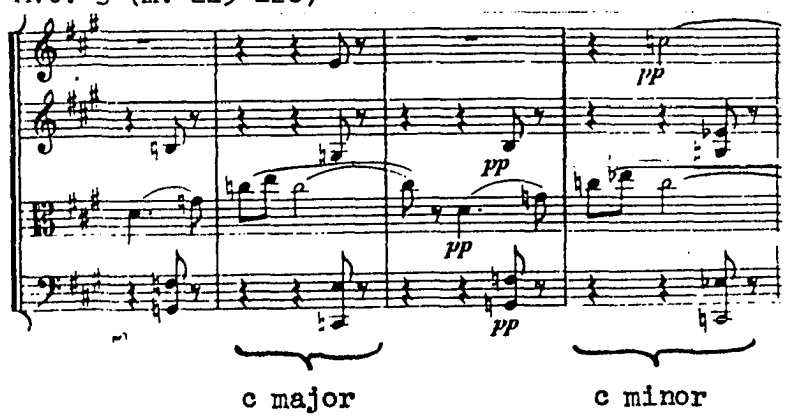


Ex. 4:25 continued

Mvt. 3 (m. 184-185)



Mvt. 3 (m. 225-228)



No instances were found in which the intervallic relationships within prominent motives acted as the intervallic basis for entrances of imitation. The single occasion of motivic influence upon the initial pitches of a sequence construction is shown in example 4:26.

Ex. 4:26

Mvt. 3 (m. 313-318)

The prominent perfect fourth of motive [o] has influenced the initial pitches of this sequence pattern: d - g - b#/c.

Chapter 5

STRING QUARTET NO. 8 IN C MINOR, OPUS 110

The eighth quartet was composed in July of 1960. In the notes which accompany volume two of the recorded quartets, Inouye says that this quartet was composed in three days. He does not reveal his source for this statement. It is known however that during the summer of 1960 Shostakovich was working in Dresden, East Germany on the film score for "May Fifth." He was deeply moved by the movie's story of Nazi oppression before and during World War II. This composition was apparently inspired by an emotional upheaval suffered by the composer as a direct result of his involvement with this film, for the eighth quartet is dedicated to "the memory of the victims of fascism and war." The first performance was played on October 2, 1960 at Leningrad by the Beethoven String Quartet.

A first aural impression of this quartet confirms what its dedication suggests: it is elegiac in character, a document both intense and introspective. This composition is a cycle of five movements performed without pause. Three of these movements (one, four, and five) are largo, a fact which serves to underscore the quartet's aura of intense sorrow. Much of the intensity and introspection

is created by a preoccupation with the D-S-C-H (d-e^b-c-b) motive and by the composer's quotation of themes and motives from his earlier compositions.

The formal designs found among the movements of this quartet are more freely structured than are the schemes observed in the seventh quartet. This may be due in part to the intensely emotional nature of this music as well as to its descriptive implications. While this quartet has no written program, the composer's concentration upon variation, transformation, and permutation of the D-S-C-H motive as well as presentation of themes from his earlier compositions creates an atmosphere of introspection and gives this quartet an autobiographical significance.

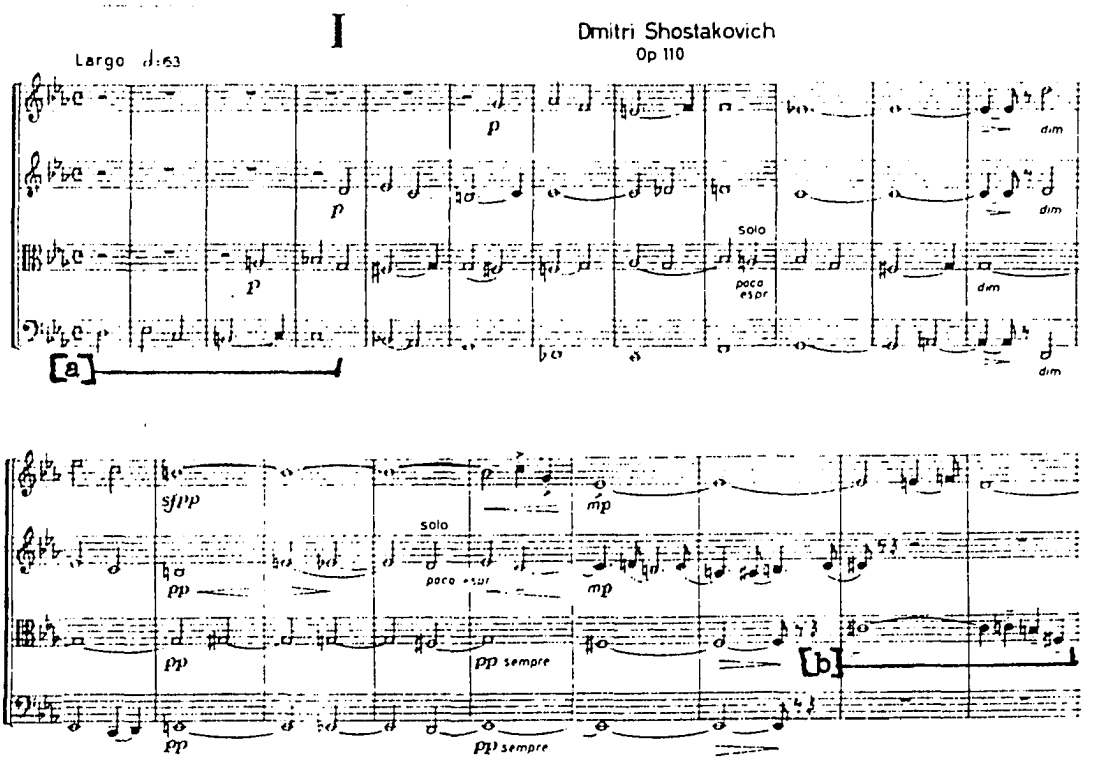
The aural impression received from the first movement is that of a simple five part arch form. Movement two is a compound binary scheme. Movement three is a compound ternary design. The fourth movement is a part form whose introduction and coda enclose three themes. The last movement is a fugue whose coda retraces the opening measures of movement one.

The graphic analysis charts show recurrence of the several thematic areas as they outline the macro-structure of the various movements. Variation, transformation, and permutation as applied to recurrences of the D-S-C-H (d-e^b-c-b) motive is the most prominent unifying factor among the linear materials of this quartet.

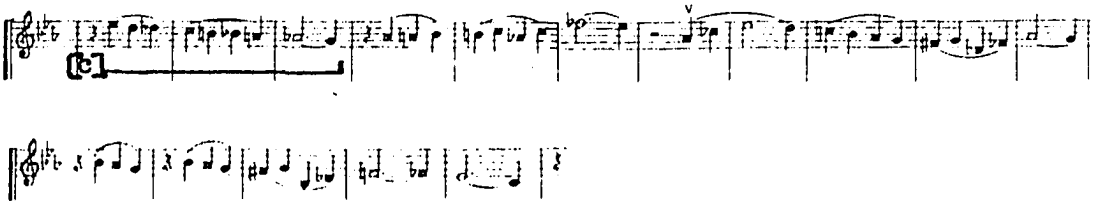
THEMATIC INDEX

Eighth Quartet
Movement one

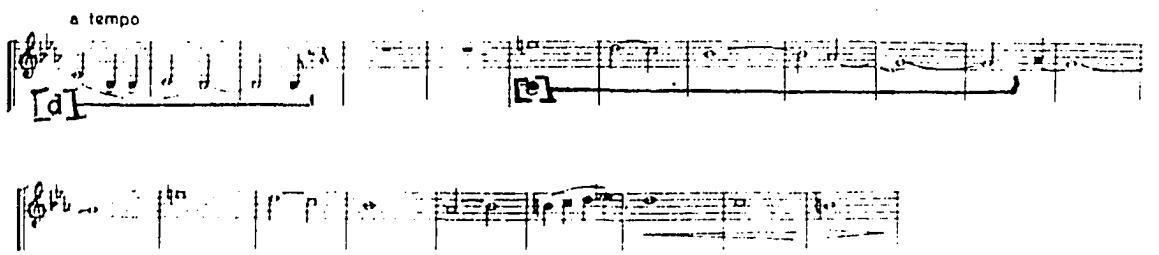
THEME A



THEME B



THEME C



GRAPHIC ANALYSIS OF FORMAL STRUCTURE

Largo - C - Arch Form - 126 measures - $\frac{4}{4}$ meter.

First Movement

Theme A
1
C:

Theme B
28
C:

Theme C
50
C:

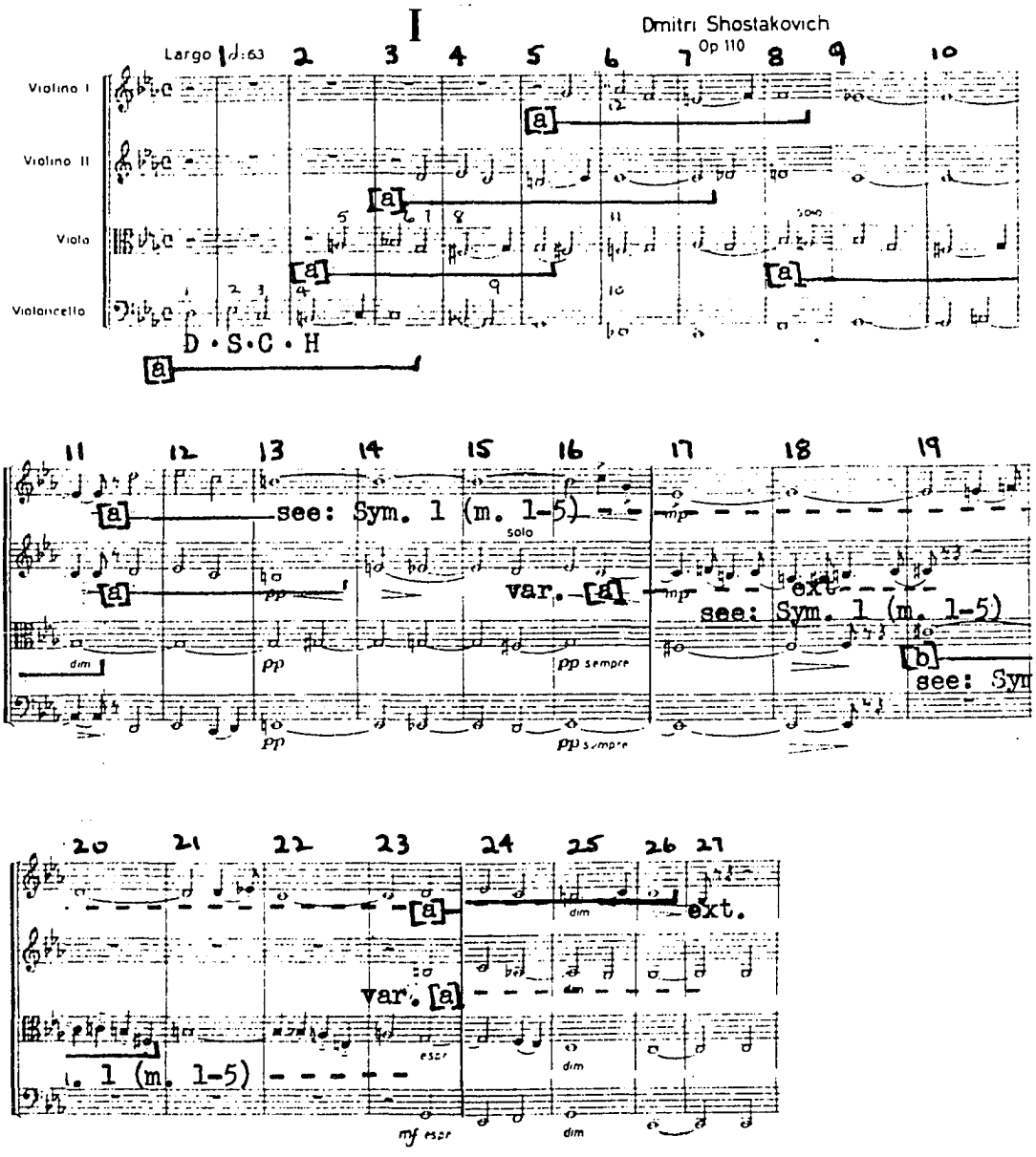
retransition
85

Theme B'
87
A:

Theme A'
105
C:

transition to Movement Two
[d]
125

THEME A



It is not without reason that the eighth quartet has been called "the Autobiographical Quartet."[1] Two of the three most prominent aural events of theme A support this descriptive title: (1) the quartet's first four pitches (d-e^{b}-c-b) spelled in their German equivalent

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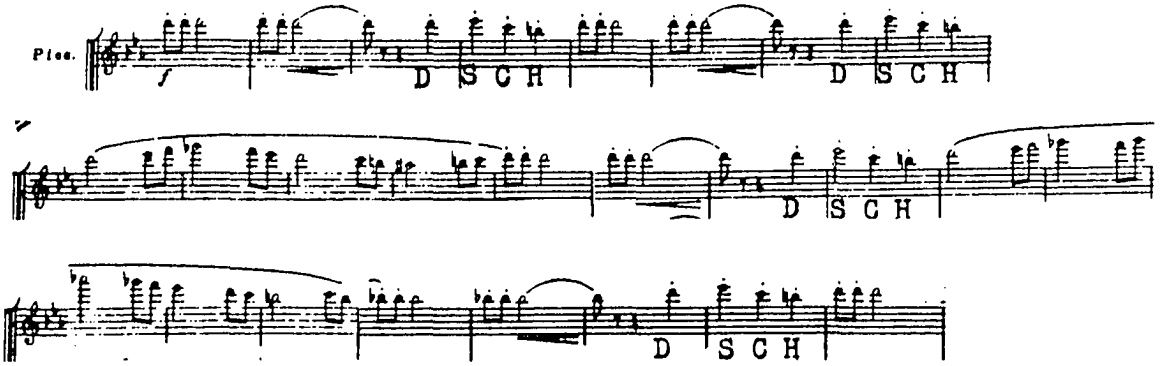
[1]Yury Keldysh, "An Autobiographical Quartet," Musical Times, CII (1961), p. 226.

become the composer's monogram D-S-C-H, and (2) the upper three instruments at measures 13-23 state contours which are immediately recognized as quotations from the introduction of the composer's first symphony. Nor is this quote from the first symphony the only borrowed linear material in these opening measures. The D-S-C-H motive itself has served as the lead motive of a prominent theme of the third movement of the composer's Tenth Symphony, opus 93. Thus the signature motive itself initiates in this quartet the use of linear material from the composer's earlier compositions.

The third prominent aural event is the presentation of all twelve tones of the chromatic scale divided among the first violin, viola, and cello within the first seven measures. This latter event is not an atonal dodecaphonic procedure for the tonal center is firmly anchored to C; however, the ear is prepared for a freer use of chromaticism than was apparent in the seventh quartet. Aural events one and three are shown on the line score; event two is shown in example 5:1.

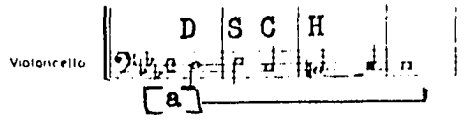
Ex. 5:1

TENTH SYMPHONY: Mvt. 3 (m. 46-71)

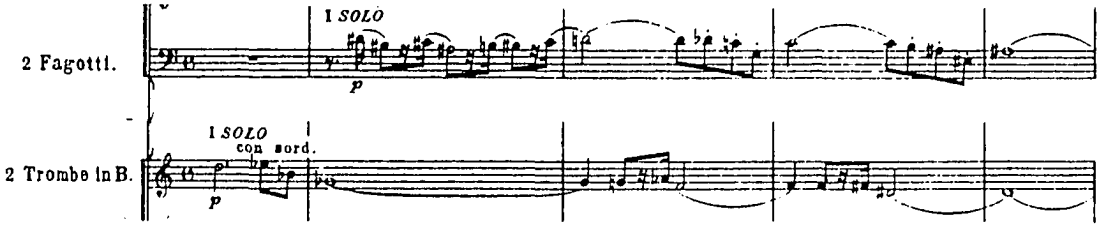


Ex. 5:1 continued

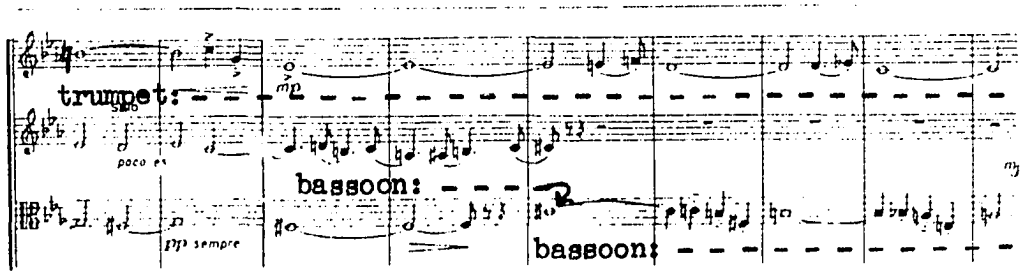
EIGHTH QUARTET: Mvt. 1 (m. 1-3)



FIRST SYMPHONY: Mvt. 1 (m. 1-5)



EIGHTH QUARTET: Mvt. 1 (m. 15-23)

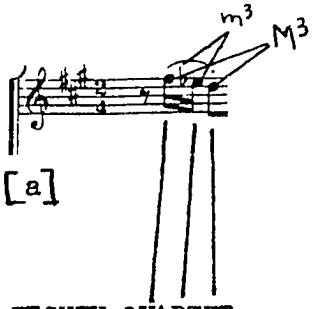


While comparison of motive types among the four quartets investigated for this study must necessarily be postponed for a later summary and conclusions, the familiar sound of the D-S-C-H motive is apparent to the ear educated to the prominent sounds of the seventh quartet. The D-S-C-H motive has an alternating scale basis: it is a permutation of the alternating scalar pattern b-c-d-e^{b}. The ear also recognizes that this particular permutation focuses upon one of the implied characteristics of the alternating scale: the expansion of a

minor third to a major third. This expansion was found to be a prominent characteristic of motive [a] of the seventh quartet as shown in example 5:2.

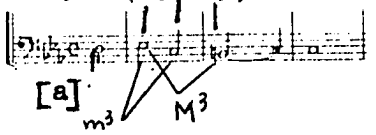
Ex. 5:2

SEVENTH QUARTET
Mvt. 1 (m. 1)



$d\text{-}e^{b}\text{-}(f)\text{-}f\#$
implied scalar pattern

EIGHTH QUARTET
Mvt. 1 (m. 1-3)



$b\text{-}c\text{-}d\text{-}e^{b}$
scalar pattern

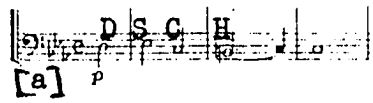
Quartets seven and eight are related through their first aural stimuli which in both compositions feature an alternating scalar basis and an expansion of a minor third to a major third.

One more question must be answered before leaving this discussion of theme A: why are the lines from the composer's first symphony so smoothly absorbed into the texture of these opening measures of the quartet? As shown in example 5:3 the first four notes of the trumpet line from the symphony are described in the general contour of motive [a] of the quartet. This aural relationship is strengthened by quotation of the trumpet line in the first violin at measures 19-22 of the quartet which describe a sequence pattern of the first three notes of

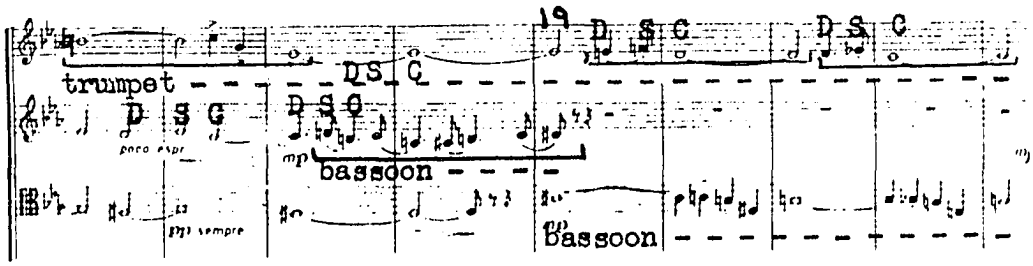
motive [a]. In the second violin at measures 17-19 of the quartet, the borrowed bassoon line from the symphony emphasizes the same sequence pattern: minor second-minor third, minor second-minor third. This is again an emphasis of the first three notes of motive [a]. As shown in example 5:3 this interval relationship of an ascending minor second followed by a descending minor third and its kinship to motive [a] is initially emphasized in the second violin of the quartet at measures 15-16 where the first three notes of [a] are stated.

Ex. 5:3

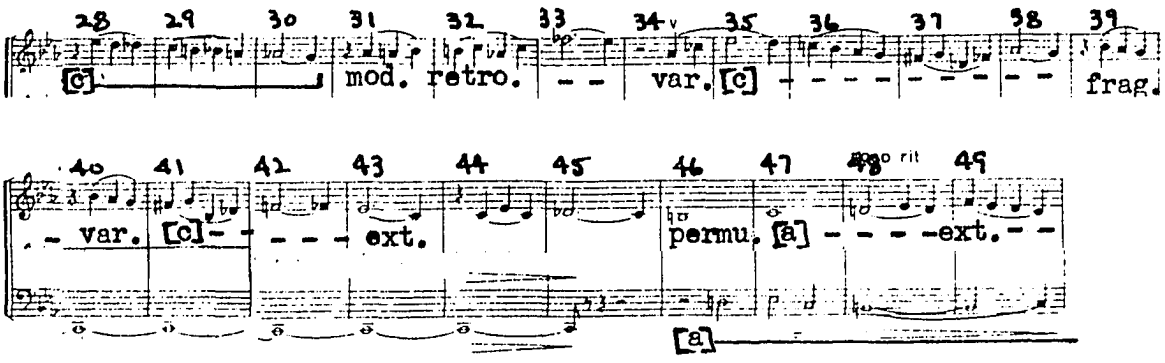
Mvt. 1 (m. 1-3)



Mvt. 1 (m. 15-23)

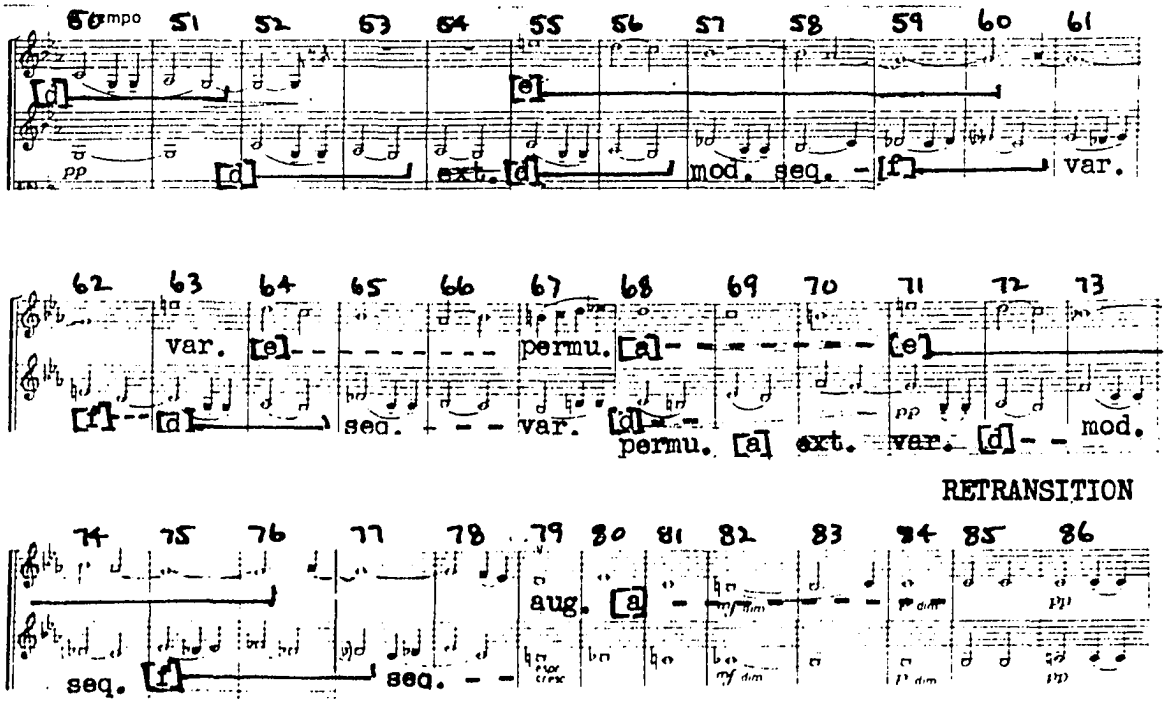


THEME B



As shown on the line score the chromaticism created by the four successive entrances of motive [a] of theme A is continued in theme B by motive [c]. At measures 46-49 an expansion of the cadence formula of measures 44-45 displays a permutation of motive [a] in the first violin with the original [a] in the cello.

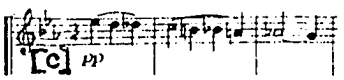
THEME C



In spite of its new sound, motive [e] is essentially a variation of the contour of [c]. The newness of [e] is due to its succession of major seconds which sound unexpected and bright following the chromaticism of themes A and B. Motives [c] and [e] are compared in example 5:4.

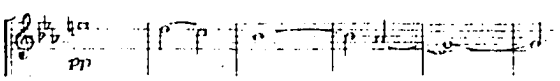
Ex. 5:4

Mvt. 1 (m. 28-30)



Motive [c] descends the interval of a minor sixth by minor seconds.

Mvt. 1 (m. 55-60)

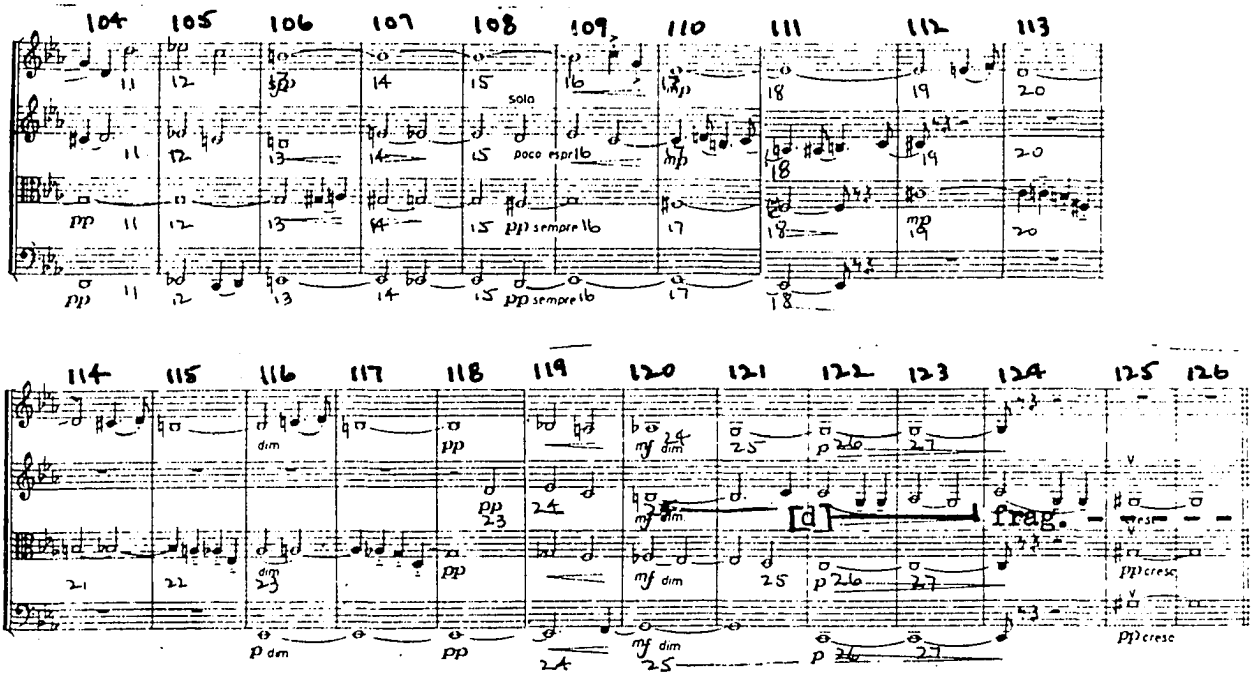


Motive [e] descends the interval of a major sixth by four major seconds plus a minor second.

Theme C closes at measures 79-84 with an augmentation of motive [a] in the first violin, a technique which strengthens the aural relationship between themes C and B.

The retransition at measures 85-86 prepares an A tonal center for a transposed recurrence of theme B in the cello at measures 87-103. No new techniques of motivic manipulation affecting structural unity were observed in this recurrence.

THEME A'



This varied recurrence of theme A is basically measures 11-27 of the original statement; the measure numbers of the original are shown on the line score. At measures 122-123 motive [d] is heard in the second violin; at measures 124-126 a fragment of [d] prepares the G# tonal center of movement two.

Summary

The first aural stimulus (motive [a] D-S-C-H) was found to be related to motive [a] of the seventh quartet by means of its alternating scalar basis and expansion of its prominent minor third to a major third. A transposition of motive [a] of the seventh quartet forms the central fragment of motive [a] of the eighth quartet (see ex. 5:2, p. 103).

Motive [a] (d-e^{b}-c-b: the D-S-C-H signature motive) was cited as the first of three prominent aural events of theme A which are to

be important unifying factors among the linear materials of this quartet. By sheer weight of its many recurrences, motive [a] is the most prominent sound of movement one. The aural intensity of [a] is also due no doubt to its almost inevitable recurrence within its original b-e^b pitch frame. The only exception to this phenomenon are the viola and first violin statements in the opening fugato.

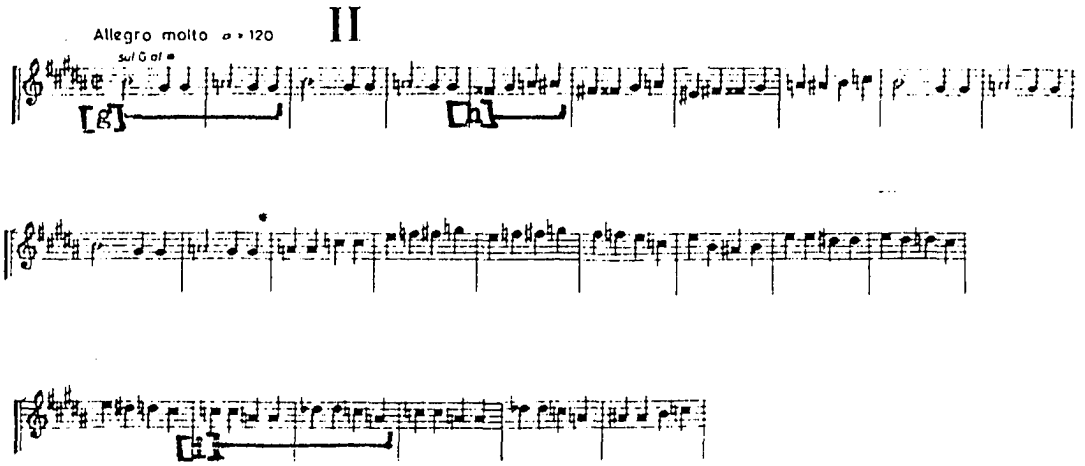
The second prominent aural event of theme A is the use by the composer of direct quotations from earlier compositions. This phenomenon was introduced by the D-S-C-H motive, a prominent sound of the third movement of the composer's Tenth Symphony, opus 93, and was continued by the statement of contours from the introductory measures of the First Symphony, opus 10 (see ex. 5:1).

The third prominent aural event of theme A is the use of all twelve tones distributed among three instruments within the first seven measures. This event not only laid the chromatic foundation for themes A and B but it also prepared the ear for the freshness (unexpectedness) of the major seconds of theme C. It is this unexpected sound which is primarily responsible for aural identification of theme C as a new theme rather than as a variation of theme B.

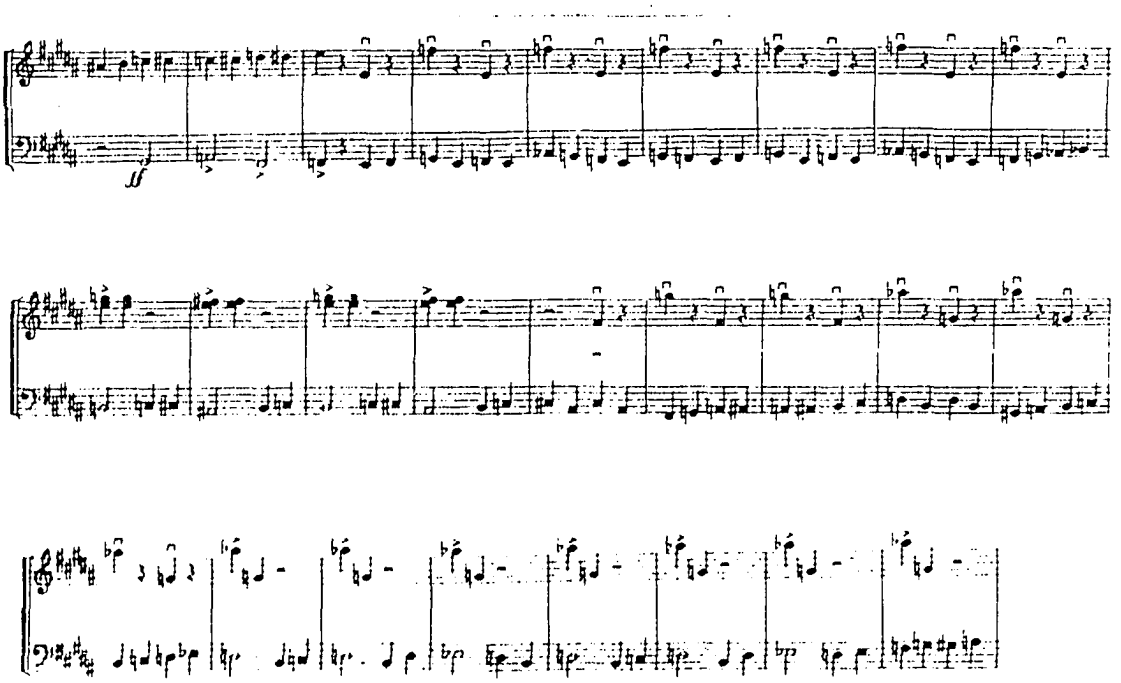
THEMATIC INDEX

Eighth Quartet
Movement two

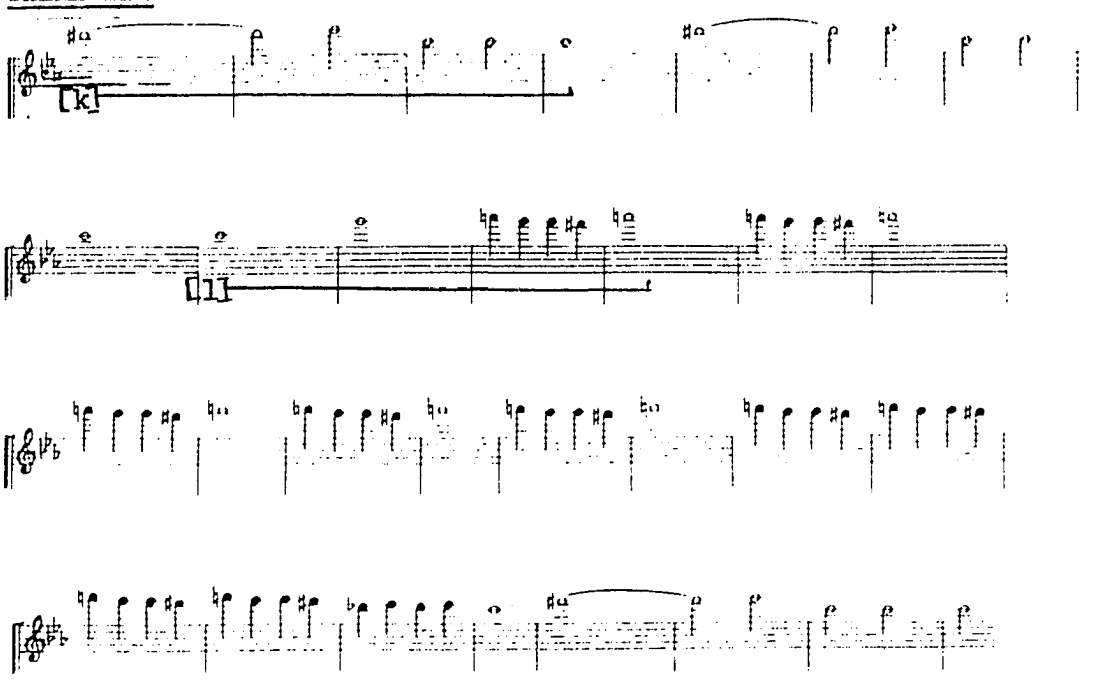
THEME Ia



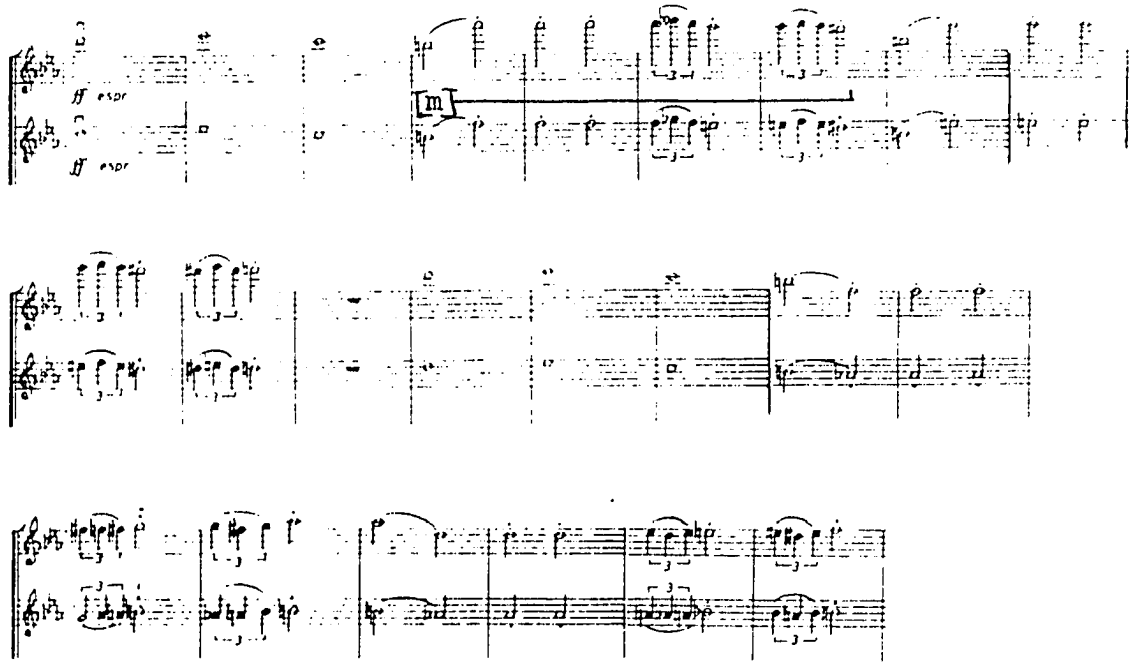
THEME Ib



THEME IIa



THEME IIb



GRAPHIC ANALYSIS OF FORMAL STRUCTURE

Second Movement — Allegro Molto - G# - Compound Binary - 349 measures - ¢ meter

Thematic Area I

A	B	A'
1	34	76
G#:		

Thematic Area II

A	B
126	175
C:	

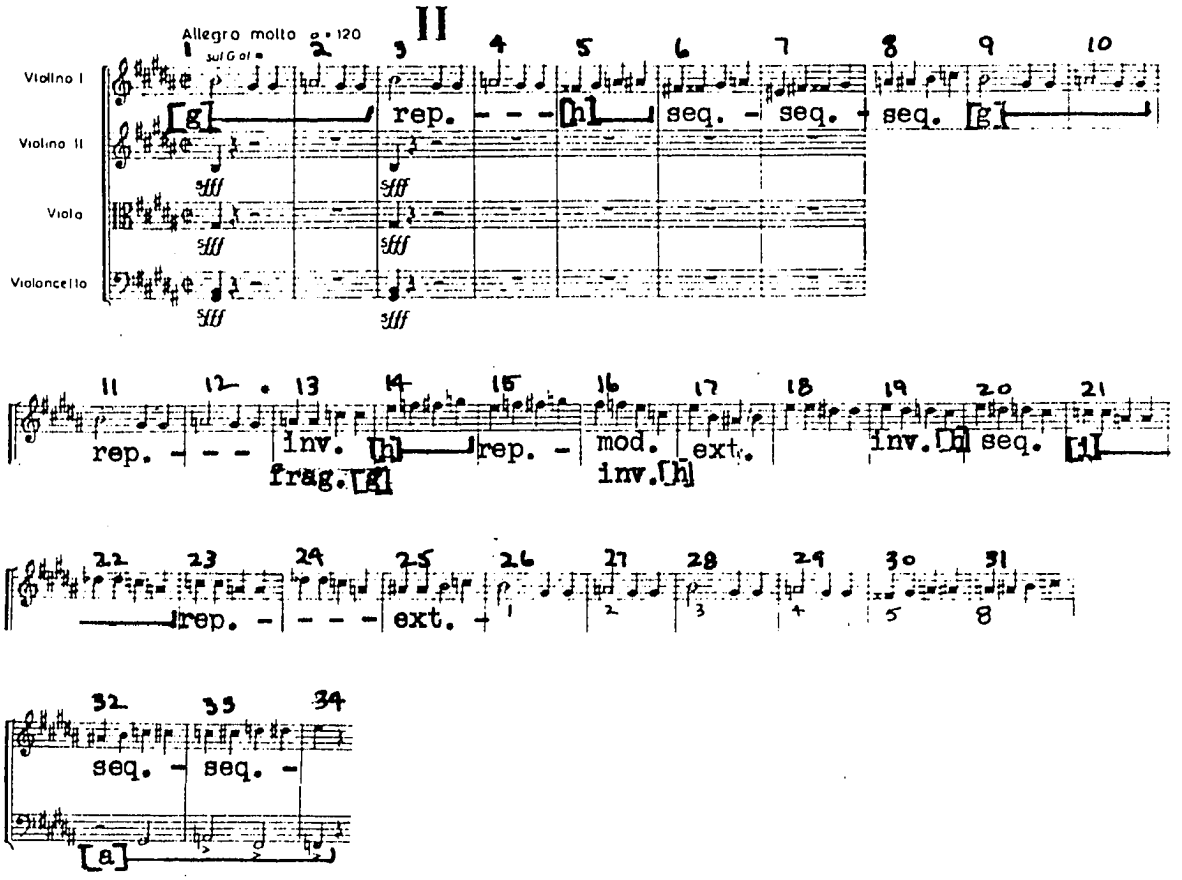
Thematic Area I'

A	Transition
233	[i] [h] [n]
G#:	259

Thematic Area II'

B	A
297	324
C:	

THEME Ia



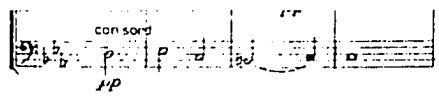
The second movement, whose metronome marking indicates a tempo of 120 for the whole note, is a tour-de-force of perpetual motion. Motives [g], [h], and [i] are the most characteristic sounds of thematic area I. Motive [g] is a transformation of [d]: while both the rhythm and the basic contour of [d] are retained, the toccata-like presentation of motive [g] as well as the new tempo and dynamics have completely altered its character.

The prominent minor seconds and minor thirds of motives [g], [h], and [i] immediately relate them all to the D-S-C-H signature motive. As shown in example 5:5 the prominent sound of motive [i] is the

expansion of a minor third to a major third and the return to a minor third.

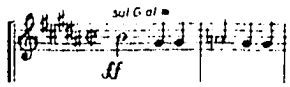
Ex. 5:5

Mvt. 1 (m. 1-3)



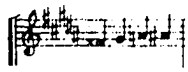
[a]

Mvt. 2 (m. 1-2)



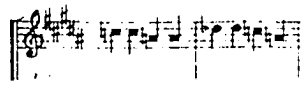
[g]

Mvt. 2 (m. 5)



[h]

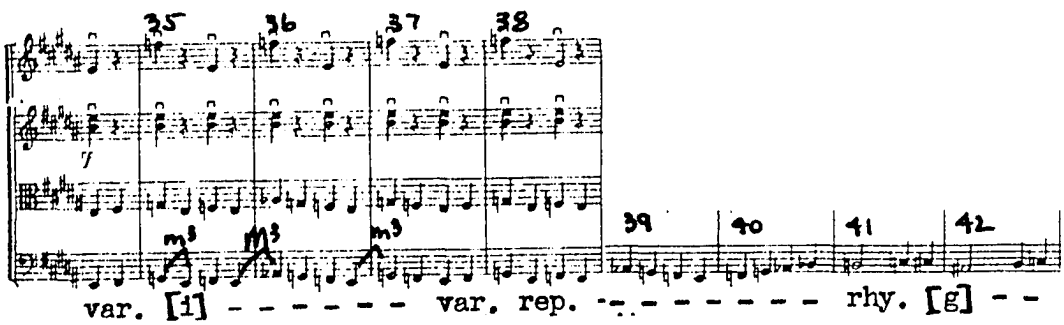
Mvt. 2 (m. 21-22)

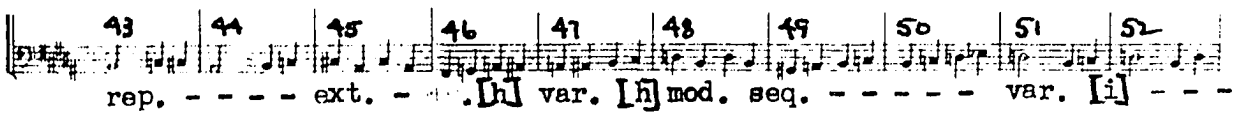


[i]

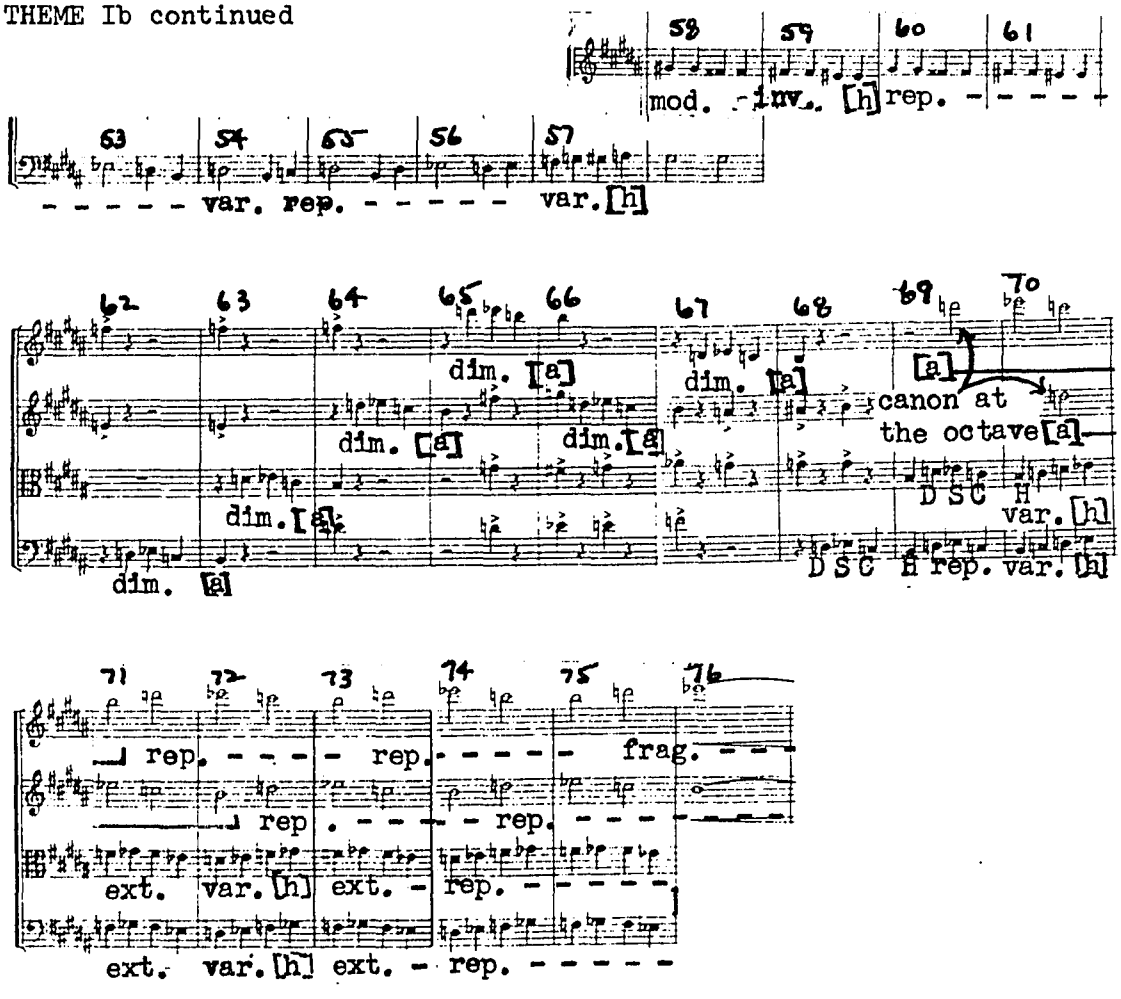
Further evidence of the aural dominance of the minor second, the minor third, and major third is found in the fact that the only other intervals found in theme Ia are two perfect fourths. As if to reinforce these aural relationships to motive [a], the D-S-C-H fragment is heard in the viola and cello at measures 32-34.

THEME Ib





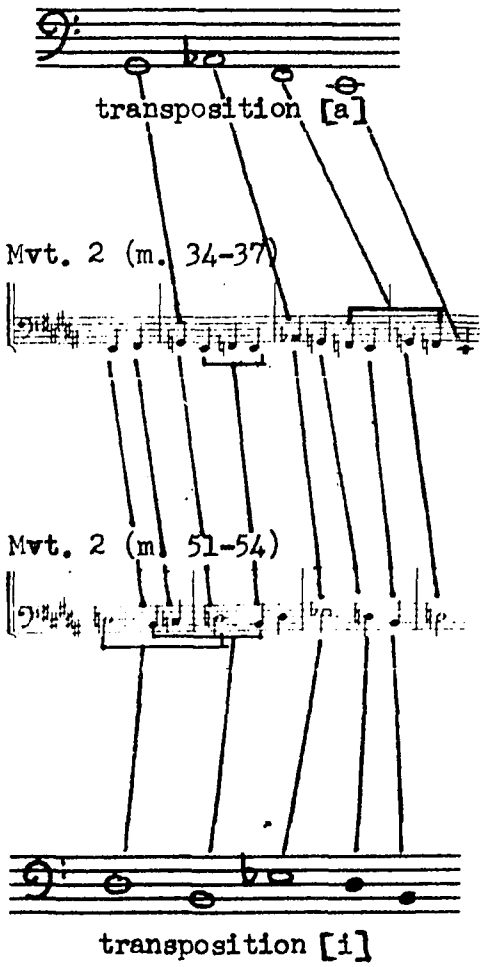
THEME Ib continued



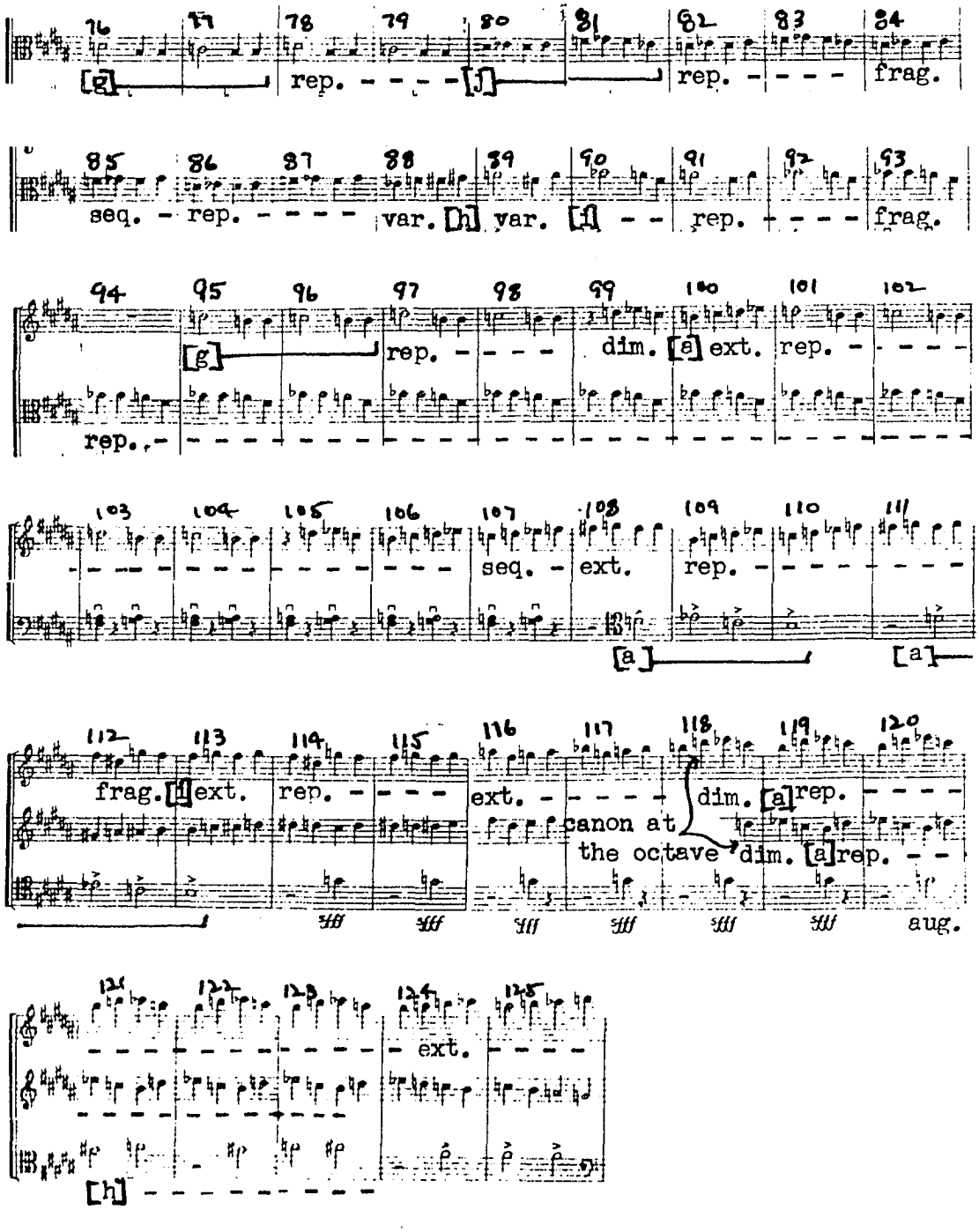
In spite of its length (42 measures) theme Ib is not a radical departure from Ia. It is instead a different manner of presenting many of the sounds of theme Ia so that their basic relationships to the D-S-C-H motive is reemphasized. The grouping of these measures into readily definable phrases has to a large extent accounted for identification of the area as thematic rather than developmental. The strong sense of return accomplished by the varied recurrence of theme Ia in the viola at measure 76 supports an analysis of: statement - departure - return. Theme Ib closes with the D-S-C-H motive first in diminution in all instruments (m. 62-69) and then in canon at the octave in the

first and second violin (m. 69-76). The viola and cello at measures 69-70 state a diminution of the signature motive whose alternating scale basis then takes control of several varied statements of motive [h]. The subtle relationships among several prominent contours of theme Ib are shown in example 5:6.

Ex. 5:6



THEME Ia'

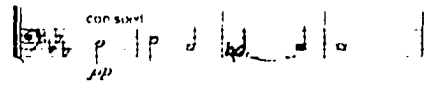

76 77 78 79 80 81 82 83 84
[g] rep. - - - - [j] rep. - - - frag.
85 86 87 88 89 90 91 92 93
seq. - rep. - - - - var. [h] var. [i] - - rep. - - - - frag.
94 95 96 97 98 99 100 101 102
[g] rep. - - - dim. [a] ext. rep. - - - -
rep. - - - -

The principal element of variance in the recurrence of theme Ia is an increased presence of the alternating scalar pattern of the D-S-C-H motive. The alternating scale is present at two levels: (1) b-c-d-e^b-f-f#-g#-a in the viola at measures 76-88 and the first violin at measures 95-107, and (2) f#-g-a-b^b-c-d^b-e^b-e in the viola at measures 89-107. The first violin at measures 108-113 uses a mixture of both scales while the D-S-C-H motive is heard in the cello. The first violin pitches at measures 114-117 are from scale pattern two while the use of pattern one returns at measures 118-125.

As shown in example 5:7 motive [g] occurs within the b-e^b pitch frame of motive [a] while [h] assumes the alternating scale during this recurrence of theme Ia. Motive [j] may logically be viewed as a transformation of variant [h] accomplished by application of the alternating scale and added pitches. Measures 89-90 show a variation of motive [i] which has assumed the rhythm of [g]. As noted on the line score measures 118-125 in the first and second violin show a canon at the octave constructed from the D-S-C-H motive in diminution.

Ex. 5:7

Mvt. 1 (m. 1-3)



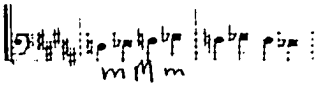
[a]

Ex. 5:7 continued

Mvt. 2 (m. 76-77)

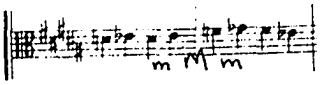
[g]

Mvt. 2 (m. 74-75)



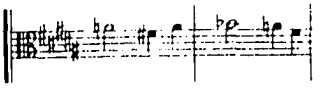
var. [h] extension

Mvt. 2 (m. 80-81)



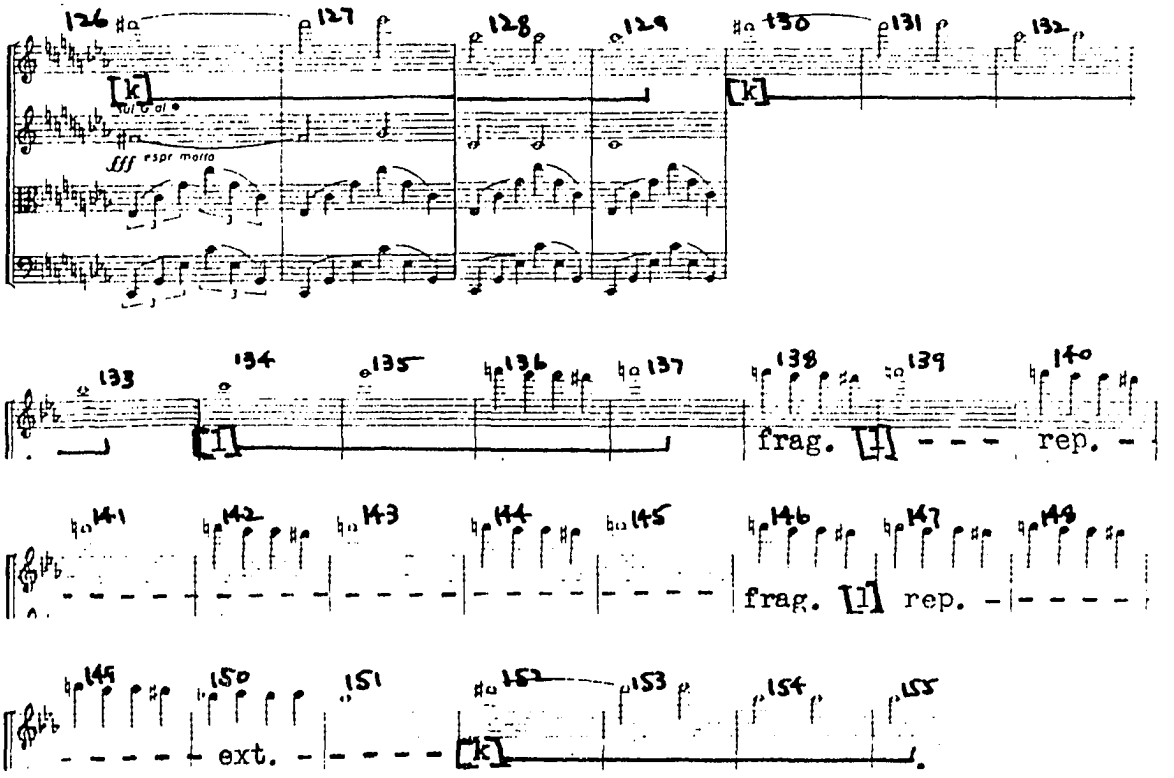
[j]

Mvt. 2 (m. 89-90)



var. [i]

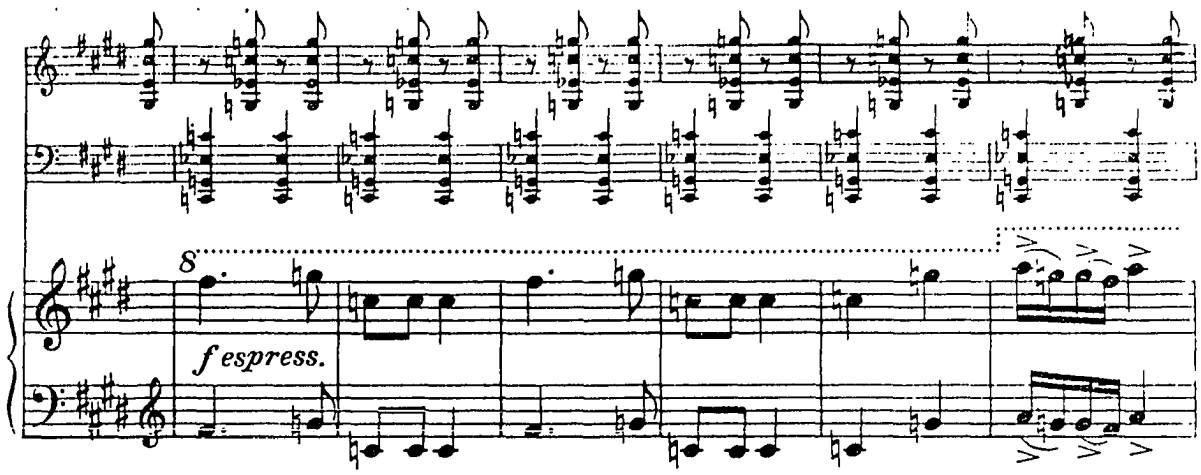
THEME IIa



As shown in example 5:8 theme IIa is a quotation from the fourth movement of the composer's Piano Trio, opus 67. The c minor multiple stops in the violin and cello voices of the trio have been retained in the viola and cello for the quartet version while the piano theme from the trio will be found in the first and second violin lines of the quartet.

Ex. 5:8

PIANO TRIO, opus 67: Mvt. 4 (m. 31-36)

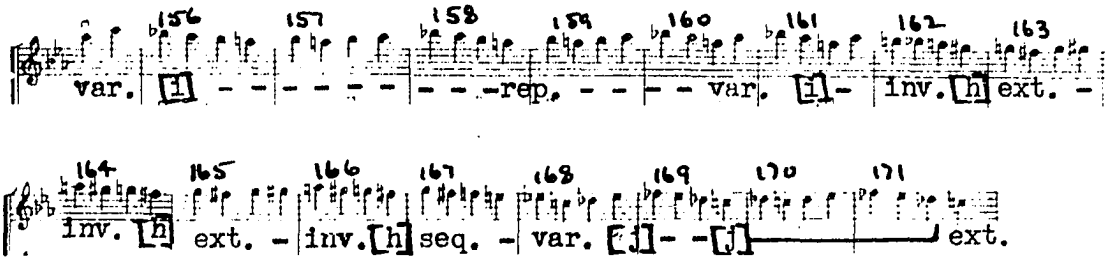


The generally longer note values of theme IIa are urged along by the triplet arpeggiation in the viola and cello, and the insistence of the repeated quarter note fragment of motive [l]. The tritone kinship of motives [k] and [l] is heightened by the structural importance of their common pitches: f#-g-c. The ear hears [l] as a modified retrograde of motive [k].

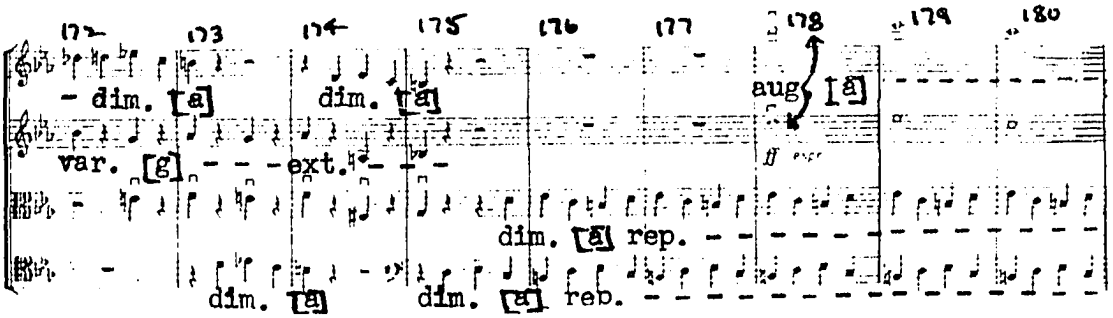
The chromaticism initiated by theme A of movement one and continued by theme B of that movement finds no place in theme IIa of the second movement. Theme Ia of movement two was very much a

combination of chromaticism (chiefly by means of motive [h]) and the alternating scale. Chromatic movement in theme Ib was limited to measures 108-115 of the second violin line. In theme IIa every pitch in all four instruments is found in the alternating scale from the C tonal center: c-d^b-e^b-e-f#-g-a-b^b. Within these selected quartets this is the first time a theme has been found which is accommodated entirely within a single alternating scale. Beginning with the opening measures of movement two the effect of the alternating scale suggested by motive [a] has been cumulative.

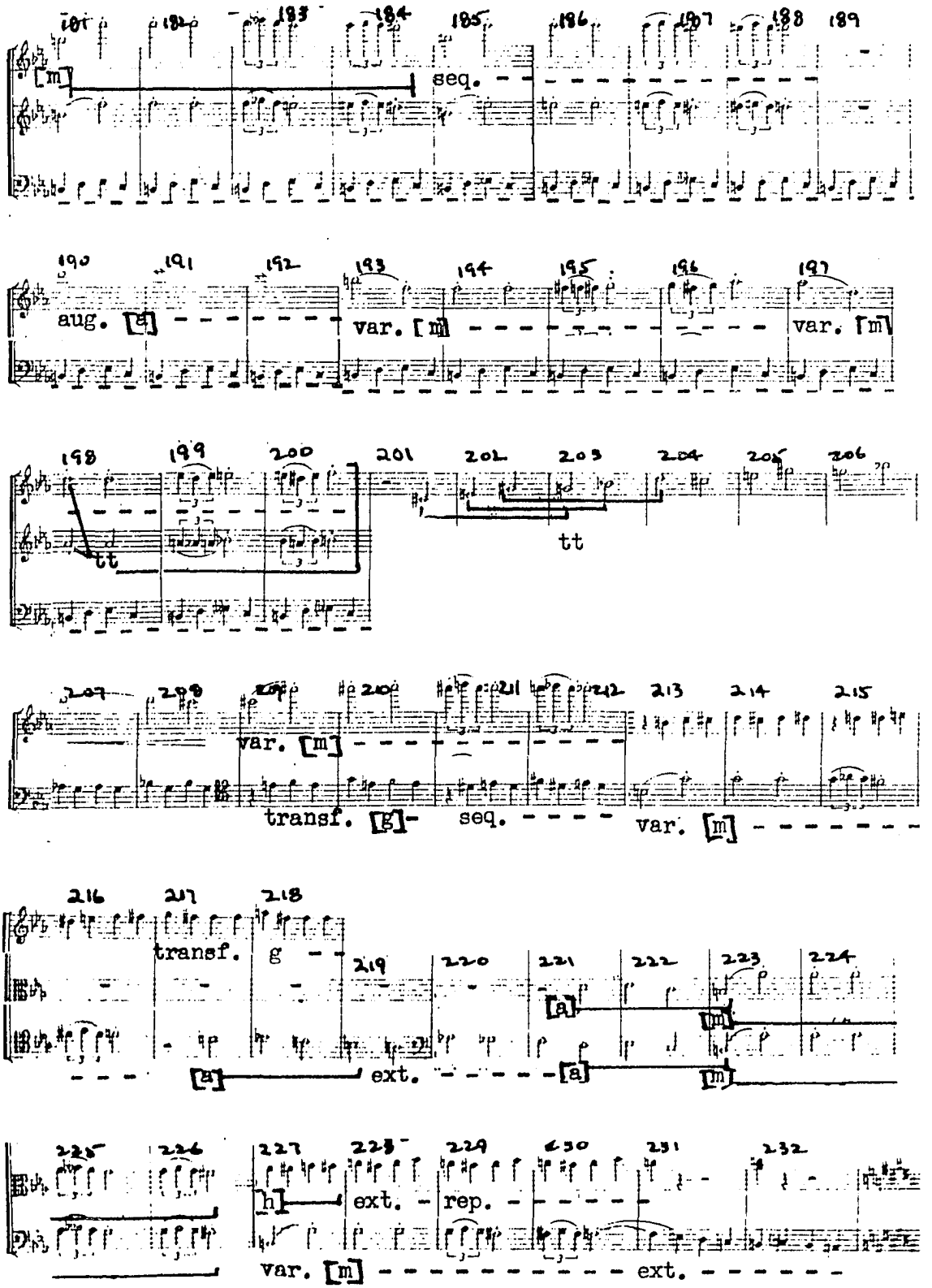
TRANSITION



THEME IIb



THEME IIb continued



The details of motivic manipulation within the transition are shown on the line score. At measures 172-174 the canonic imitation of the D-S-C-H motive in the first violin and cello anticipates the use of the signature motive in the viola and cello for an ostinato which accompanies theme IIb. At measure 178 the D-S-C-H motive is also used as the lead motive of theme IIb.

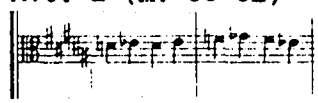
The two most prominent intervals of motive [a] are the minor second and the minor third. An exploitation of these two intervals is present in motive [m] (m. 181) in that motive's predominantly half-step movement and the minor third doubling between the first and second violin.

The prominent tritone between the first and second violin at measures 198-200 is a characteristic sound of motives [k] and [l] which at the same time anticipates the tritone relationship between the factors of the arpeggiated c# minor and g minor triads in the first violin at measures 201-208. At measure 209 the transformation of [g] in the cello is achieved by diminution and added pitches at the beginning. The transformation of [g] in the first violin at measures 217-218 is achieved primarily by a reverse order of the two prominent fragments of [g]: the minor third and the minor second. By the sheer weight of their myriad recurrences the minor second and the minor third are the most prominent sounds of theme IIb. Thus a continuing emphasis upon the two prominent intervals of the D-S-C-H motive is present.

As shown in example 5:9 the apparently new sound of motive [m] bears a close affinity to both the shape and the pitches of motives [j] and [l].

Ex. 5:9

Mvt. 2 (m. 80-81)

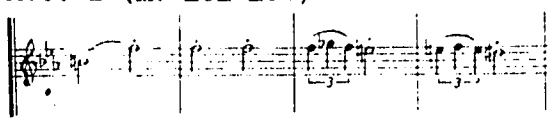


[j]

Mvt. 2 (m. 134-137)

[l]

Mvt. 2 (m. 181-184)



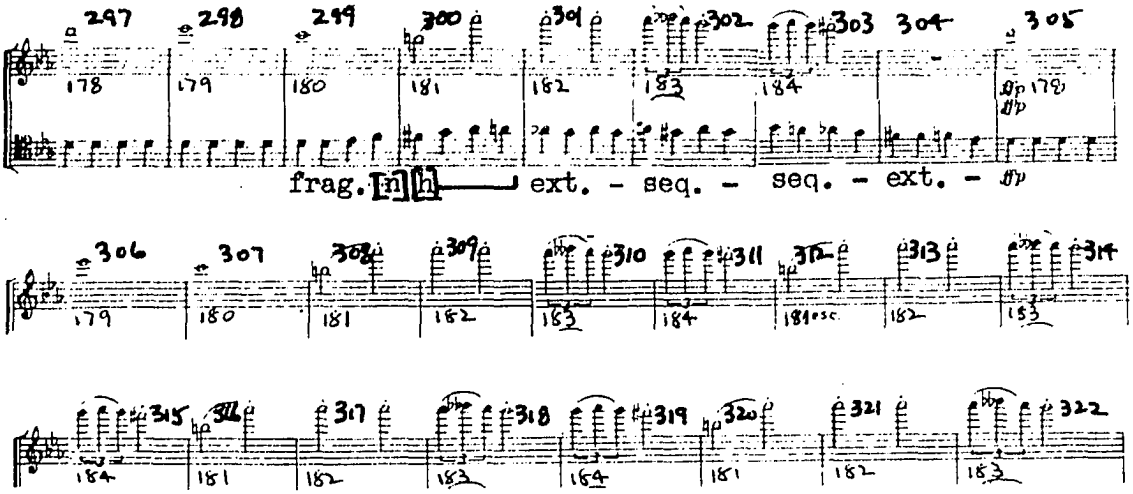
[m] upper neighbor fragment of [j]

The recurrence of theme Ia at measures 233-258 is basically measures 1-13 of the original statement. These thirteen measures are then repeated in transposition up a minor third. No new techniques affecting structural unity were found.

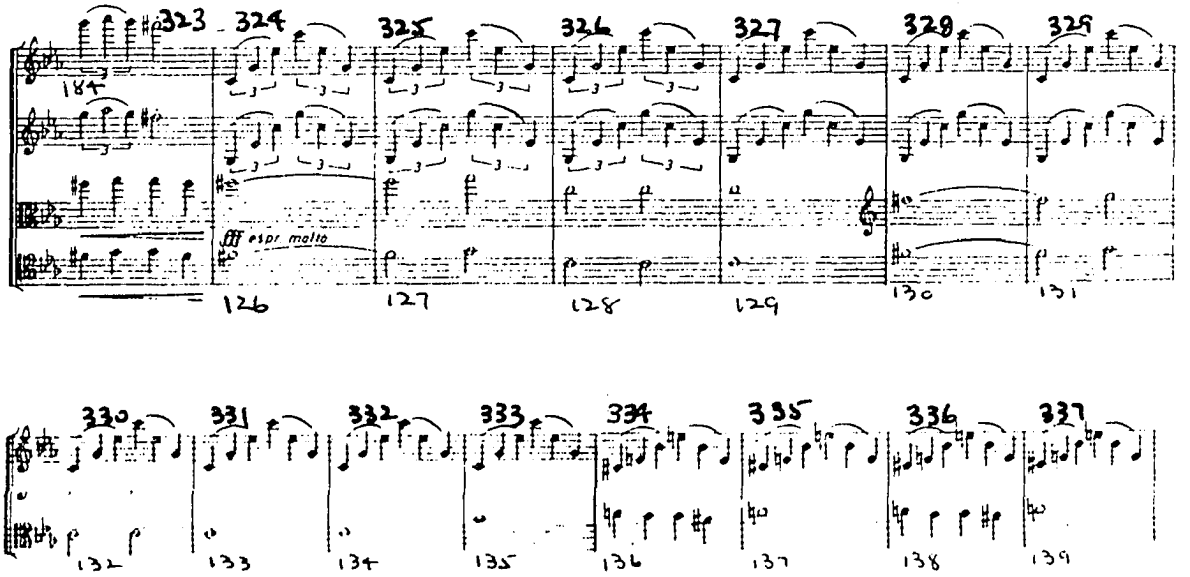
The transition at measures 259-296 is constructed primarily from motives [h] and [i]. The principal techniques are repetition and

sequence of linear material. No new techniques affecting structural unity were found.

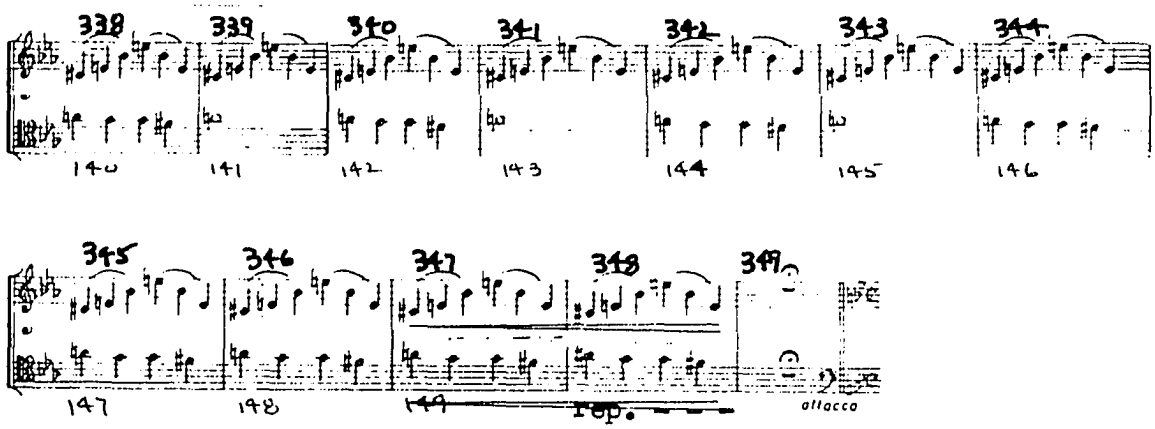
THEME IIb



THEME IIa



THEME IIa continued



As shown on the line score this movement closes with the two themes of thematic area II in reverse order. The recurrence of theme IIb (m. 297-323) features five successive statements of its most characteristic sound: motive [m]. The recurrence of theme IIa is a replication of the original statement (m. 126-149) with the primary linear material in the viola and cello. The harmonic tension is increased considerably in this recurrence at measures 334-348 where the upper voices articulate a c# full diminished seventh chord; the original statement was accompanied throughout by a c minor triad. The movement ends abruptly at measure 348 without resolution of the full diminished seventh structure.

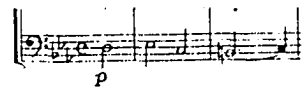
Summary

The three prominent aural events of theme Ia of movement one were all observed in movement two, although in different proportion: (1) the D-S-C-H motive and its attendant alternating scalar pattern, (2) the quotation of themes from the composer's earlier compositions, and (3) the chromaticism cited in the opening measures of movement one.

While the D-S-C-H motive was one of the most characteristic contours of the first movement only one other prominent motive of that movement was found which displayed an influence of the alternating scale: motive [f]. In the second movement not only is motive [a] a prominently recurring contour, but six of the eight prominent motives of this movement were found to accommodate themselves within an alternating scale: [g], [i], [j], [k], [l], and [n]. Thus while some chromatic movement exists in movement two (motives [h] and [m]) the most prominent sound is that of the alternating scalar pattern; theme IIa is constructed completely within an alternating scale from its C tonal center: c-d^b-e^b-e-f#-g-a-b^b. Example 5:10 displays the alternating scale motives of movements one and two.

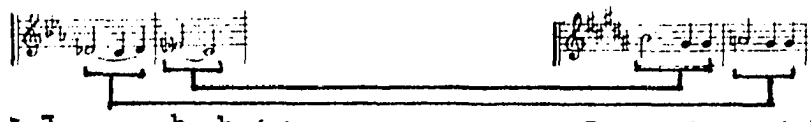
Ex. 5:10

Mvt. 1 (m. 1-3)



[a] b-c-d-e^b

Mvt. 1 (m. 59-60) Mvt. 2 (m. 1-2)

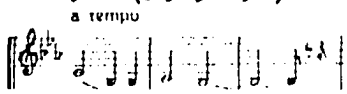


[f] c-d^b-e^b-(f) [g] g#-a-b-(c)

Motive [g] is related to [f] by means of an aural recognition that the order of the two fragments of [f] occur in reverse order in motive [g].

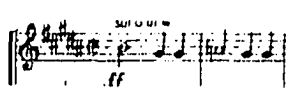
Ex. 5:10 continued

Mvt. 1 (m. 50-52)



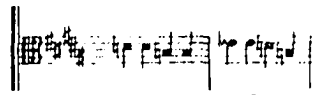
[d] not alternating scale

Mvt. 2 (m. 1-2)



[g] g#-a-b-(c)

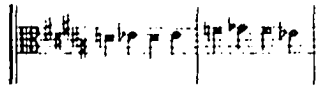
Mvt. 2 (m. 21-22)



[i] b-(c)-d-e^b

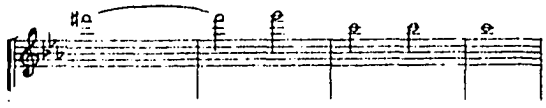
Motive [i] displays three of the original pitches of the D-S-C-H motive. Motive [i] is also related to [g] by virtue of its initial minor third descent, its rhythm (the two repeated quarter notes equal the temporal span of the half note), and its return to the same pitch for the final sound of each of its two measures. This last characteristic also relates [i] to motive [d].

Mvt. 2 (m. 80-81)



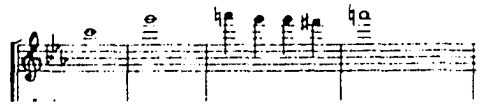
[j] d-e^b-f-g^b

Mvt. 2 (m. 126-129)



[k]

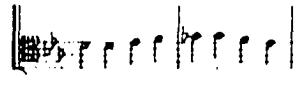
Mvt. 2 (m. 134-137)



[l]

Motive [l] is a modified retrograde of the contour of [k]. Both of these motives are constructed from the alternating scale from the C tonal center of theme IIa: c-d^b-e^b-e-f#-g-a-b^b.

Mvt. 2 (m. 289-290)



[n] d-e^b-f-g^b

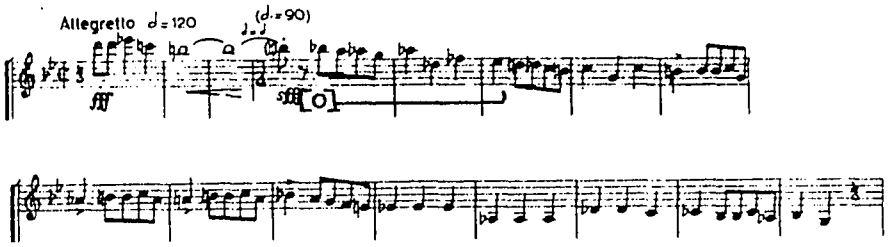
Motive [n] is a transformation of [j] by virtue of their shared alternating scalar ascent, their pitch frame d-g^b, and their basic contour.

The quotation of themes from the composer's earlier compositions continues in this movement: a theme from the fourth movement of the Piano Trio, opus 67 is heard as theme IIa at measures 126-155 and 324-348. Although chromaticism is not nearly as characteristic of this movement as it was of movement one, motives [h] and [m] feature semitone motion.

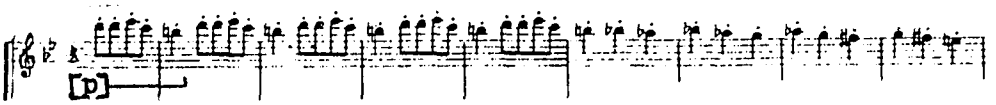
THEMATIC INDEX

Eighth Quartet
Movement three

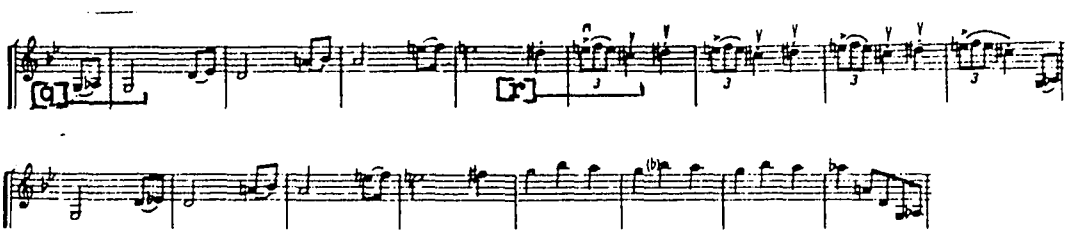
INTRODUCTION



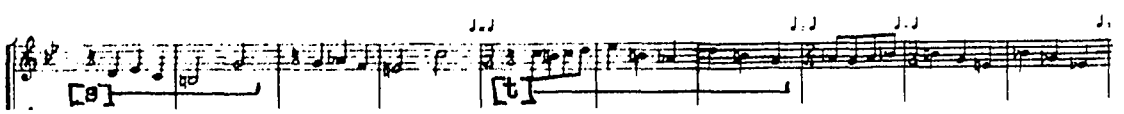
THEME Ia



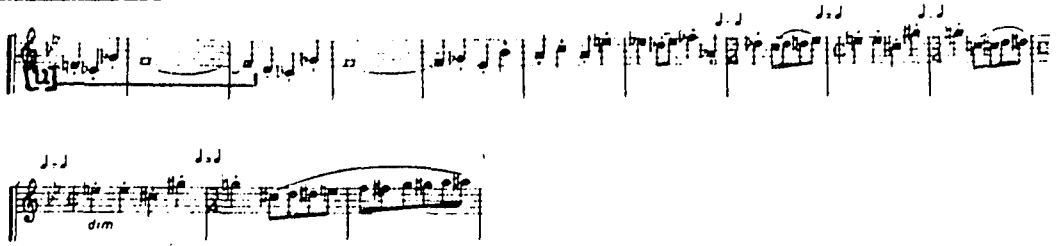
THEME Ib



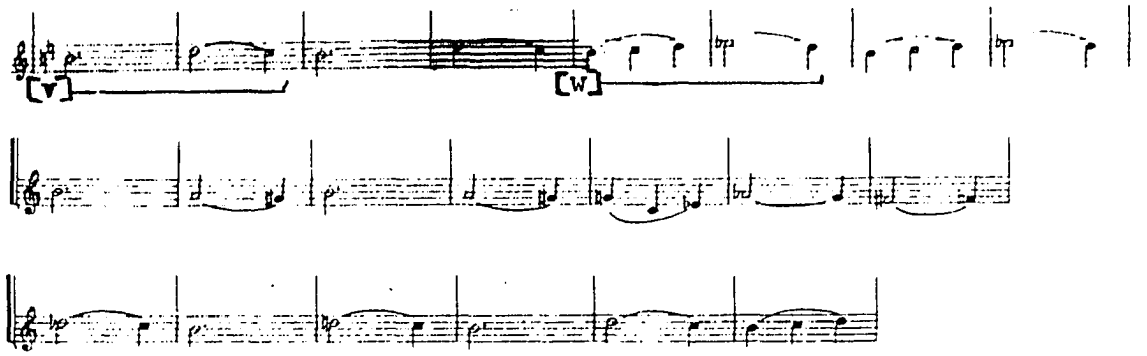
THEME Ic



TRANSITION



THEME IIa



GRAPHIC ANALYSIS OF FORMAL STRUCTURE

Third Movement — Allegretto - G - Compound Ternary - 301 measures - $\frac{3}{4}$ meter.

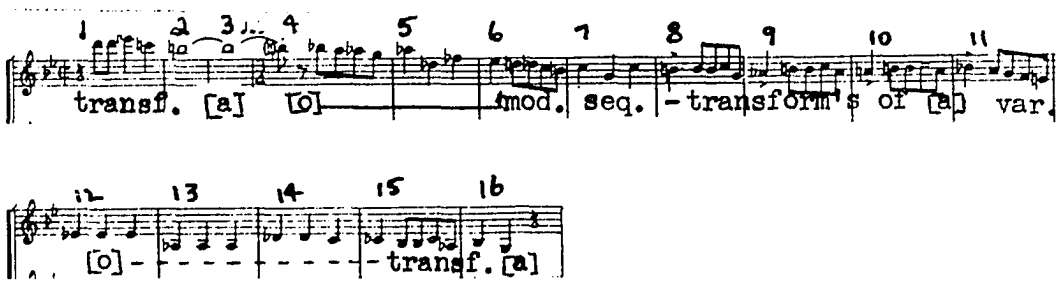
Thematic Area I						
Intro.	A	B	A'			transition
1	17	67	102	¢&$\frac{3}{4}$	C	[t]
	G:	C:	G:		117 F:	140

Thematic Area II	
A	A'
153	169
E:	

Thematic Area I						
Intro.	A	B	A'			transition to Mvt. Four
190	209	226	245	¢&$\frac{3}{4}$	C	[t] [o]
	G:	C:	G:		260 F:	270

Attempts by the composer to sweep away some of the gloom and menace of movements one and two with a scherzo-like third movement have produced a melancholy waltz which is ladened with bittersweet irony. There is in this movement a forced gaiety, a sort of grim determination to seek a relaxation of tensions which in turn creates its own thinly disguised menace and tension. The means to this atmosphere are several. The characteristic sound of six of the nine prominent motives is either basically descending or an ascent closed with a descent, thus any expansion of lines is effectively choked off. The themes neither develop nor expand their horizons, but succumb to mere repetition of opening phrases. The abruptness with which the several themes succeed one another heightens their terseness. This terseness is abetted by the shortness of the motives, for seven of the nine most prominent motives are only five notes or less in length.

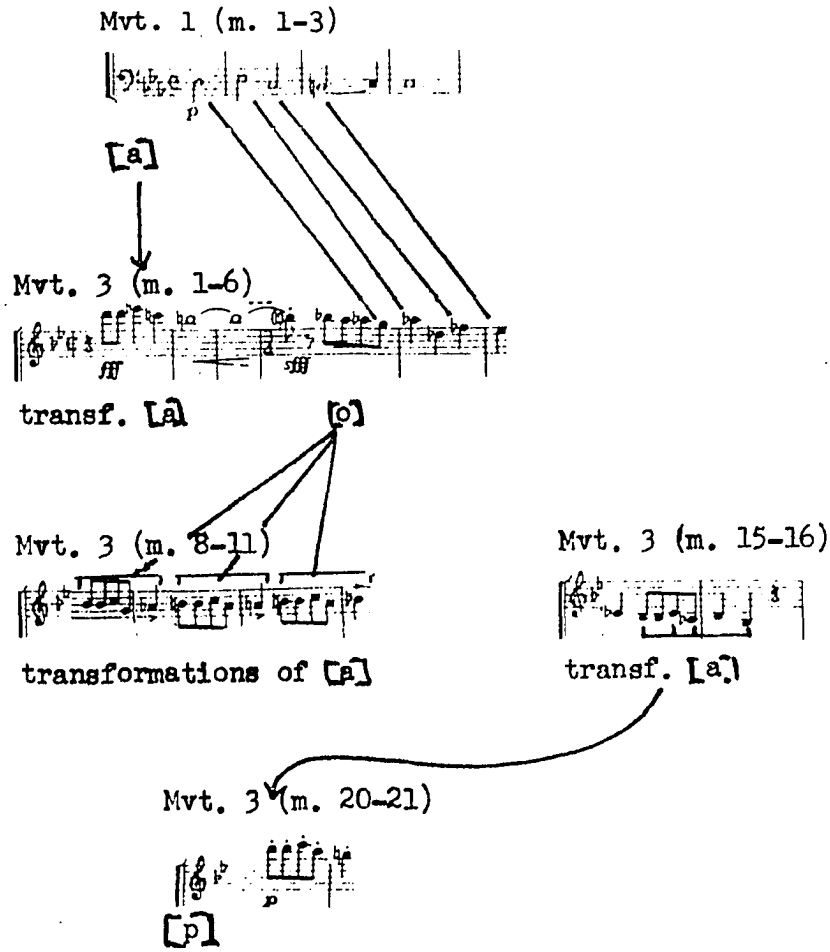
INTRODUCTION



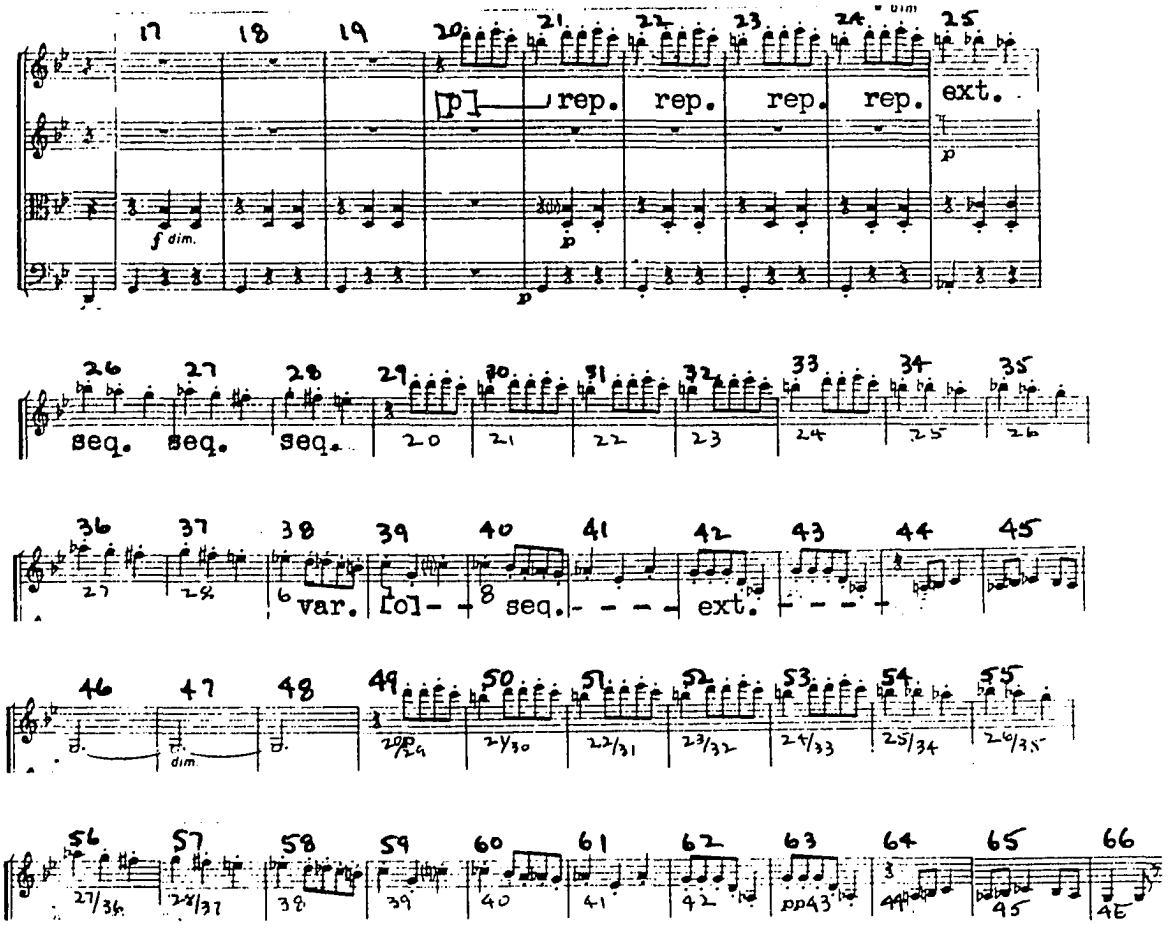
The introduction begins with a variation of the D-S-C-H motive and thus emphasis is immediately placed upon one of the three primary unifying events of this quartet. At the same time this variation of the signature motive anticipates the waltz transformation of [a] at measures 20-21 which is identified as motive [p]. Motive [o] at measures 4-5

anticipates the rhythm of [p]; motive [o] is also a thinly disguised variation of the D-S-C-H contour accomplished by addition of pitches and intervallic expansion. The transformations of the D-S-C-H motive at measures 8-11 and 15-16 continue the rhythmic anticipation of motive [p] which was begun by [o]. At the same time each succeeding transformation more closely approaches the contour of motive [p] as shown in example 5:11.

Ex. 5:11

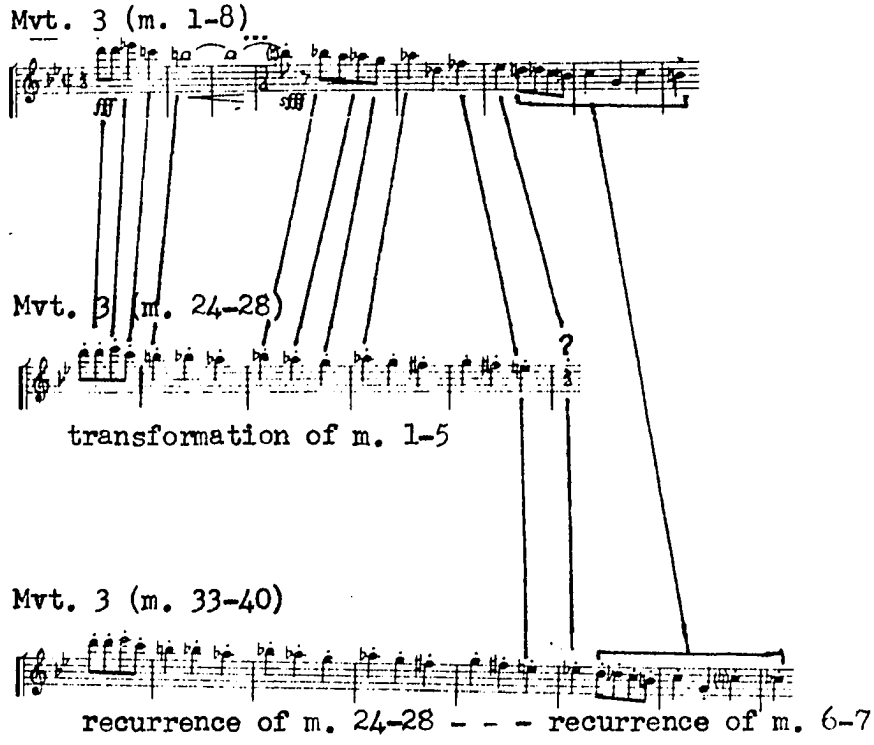


THEME Ia

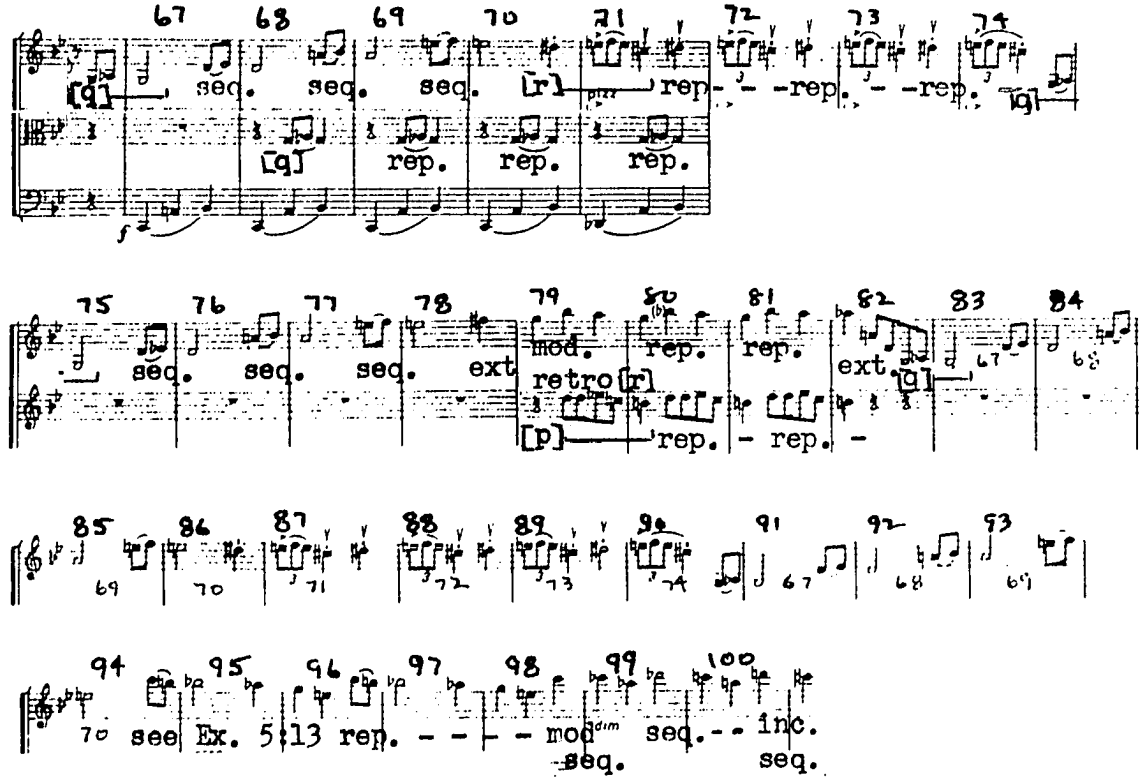


The techniques of motivic manipulation are shown on the line score. At measures 24-28 the ear recognizes immediately a close parallel with measures 1-5 of the introduction. The intellect would perhaps dismiss this observation as a descent through similar pitches. However, as shown in example 5:12 a recurrence of measures 24-28 at measures 34-37 is followed by recurrence of measures 6-8 thus reinforcing the relationship of measures 24-28 to measures 1-5.

Ex. 5:12

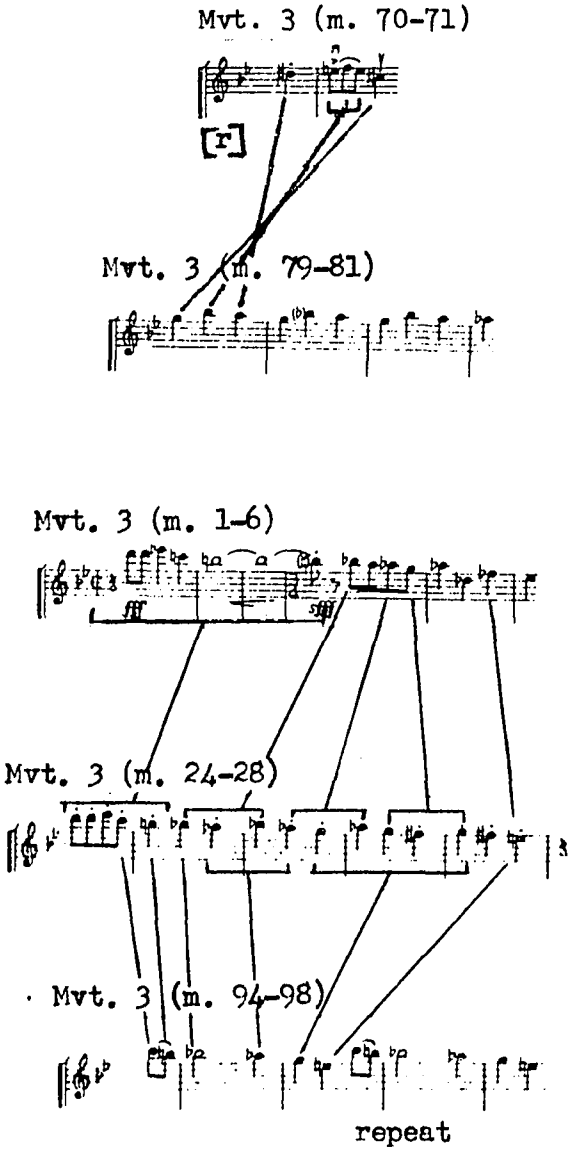


THEME Ib

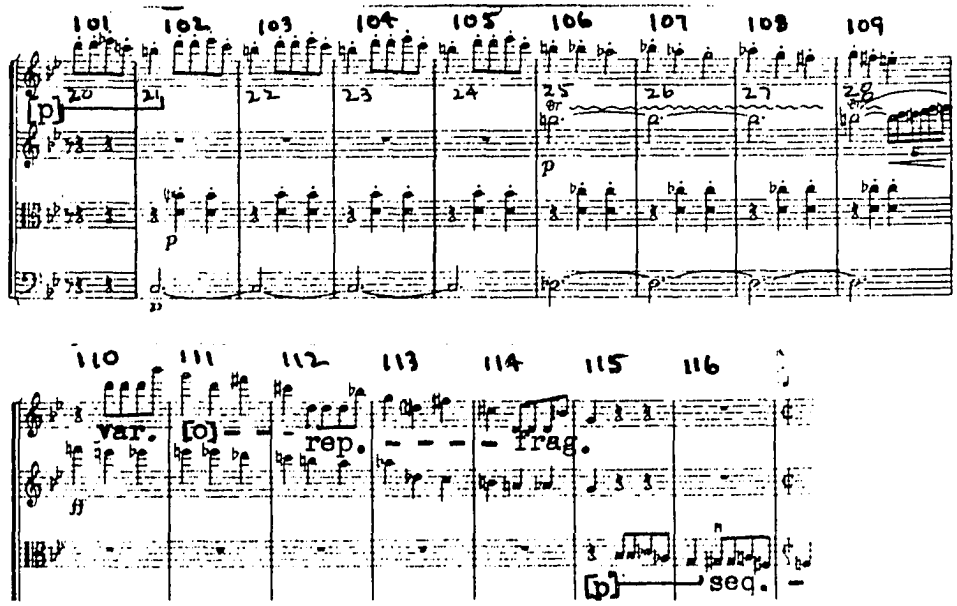


The upper neighbor motive [q] is complimented by the upper neighbor tone decoration of the second note of motive [r]. The basic three note contour of motive [r] (d#-e-c#) is a transposition of the first three pitches of the D-S-C-H motive. Example 5:13 shows that measures 79-81 in the first violin are a retrograde of the basic contour of motive [r] while measures 94-98 may trace their heredity back through measures 24-28 to measures 1-6.

Ex. 5:13

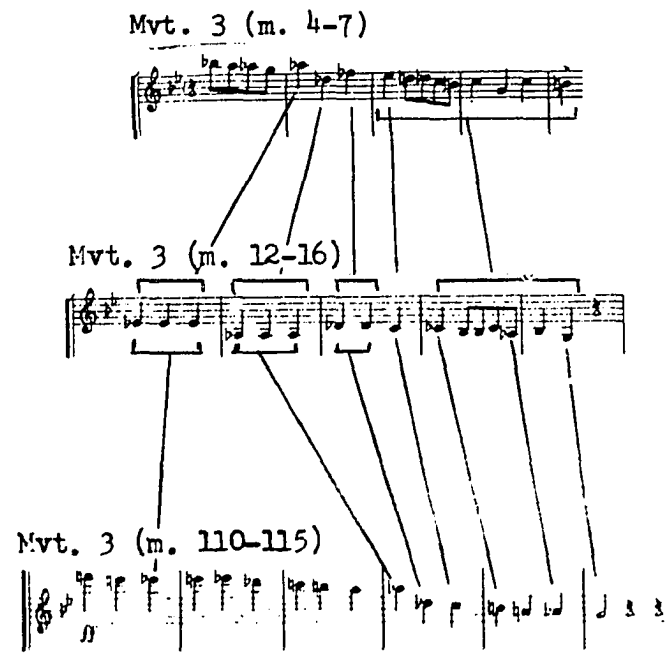


THEME Ia'

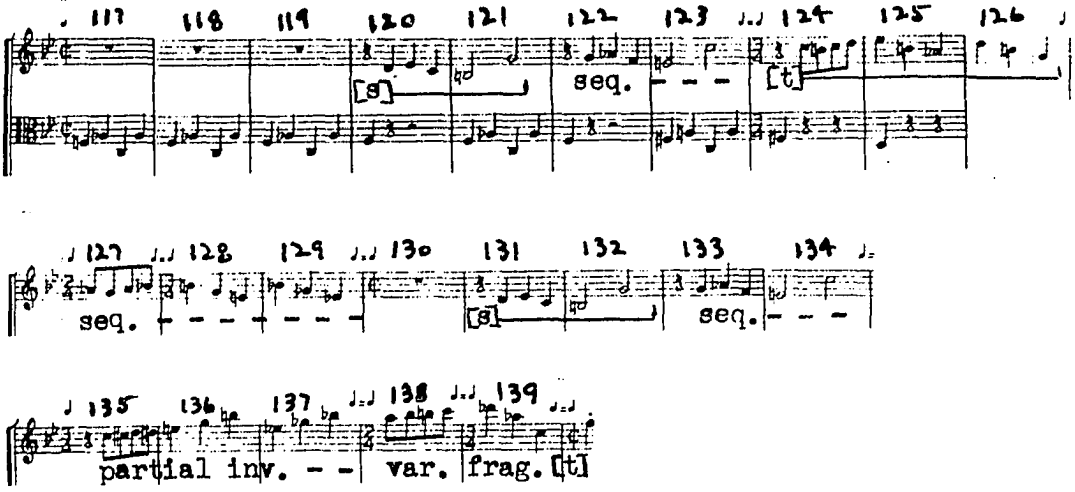


The details of this varied return of theme Ia' are shown on the line score. Measures 110-116 act as transition to theme Ic. As shown in example 5:14 the heredity of the second violin contour of this transition may be traced to measures 12-16 of the introduction.

Ex. 5:14

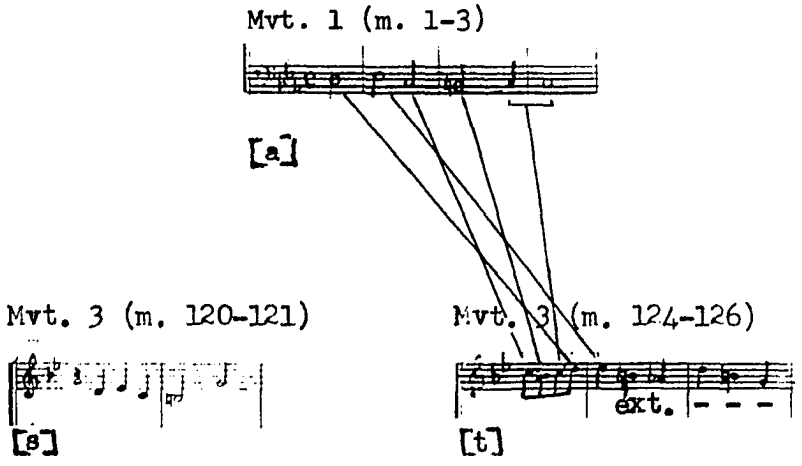


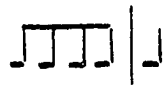
THEME Ic



Motives [s] and [t], the most prominent sounds of theme Ic, are members of the family of transformations of the D-S-C-H motive. Motive [s] is only slightly disguised by diminution, motive [t] as shown in example 5:15 features diminution, permutation, and extension.

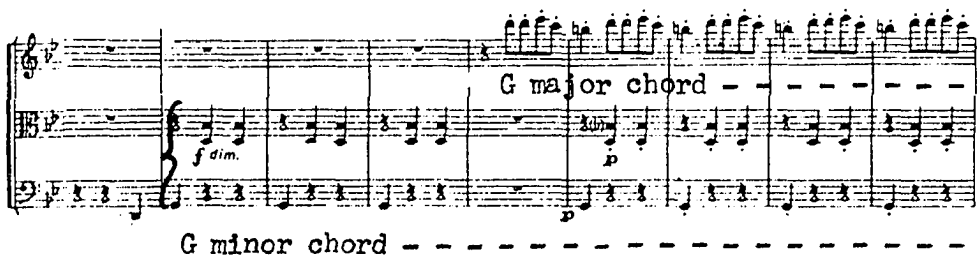
Ex. 5:15



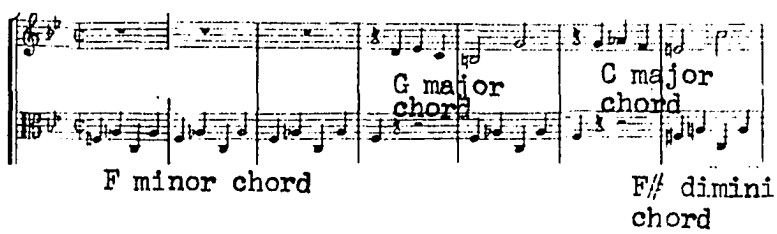
The common  rhythm of motives [t], [p], and [o] is a unifying factor among the prominent sounds of thematic area I; in addition, all six of the motives of thematic area I begin with an anacrusis. A more subtle unifying factor among the linear materials of thematic area I is the bi-chordal relationship which exists between the initial motives of theme Ia and Ic and their accompaniments as shown in example 5:16.

Ex. 5:16

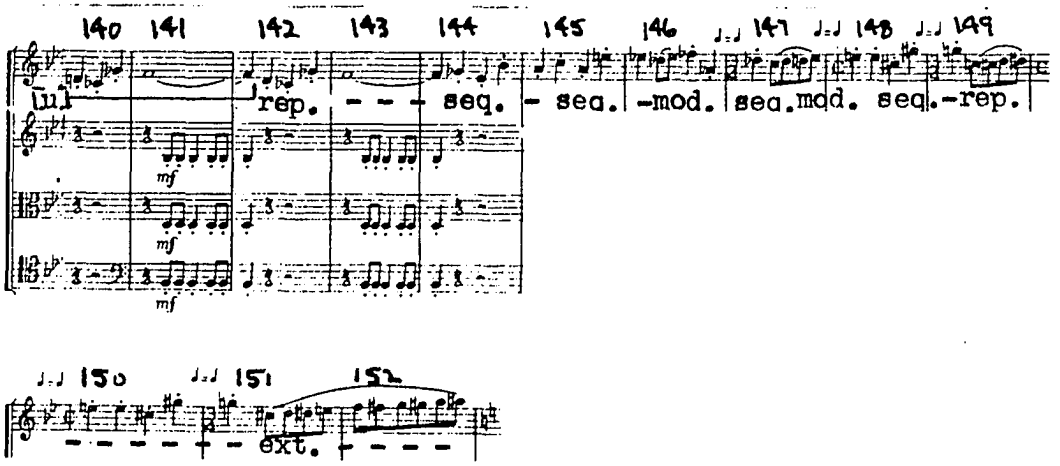
Mvt. 3 (m. 16-24) - beginning of theme Ia



Mvt. 3 (m. 117-121) - beginning of theme Ic



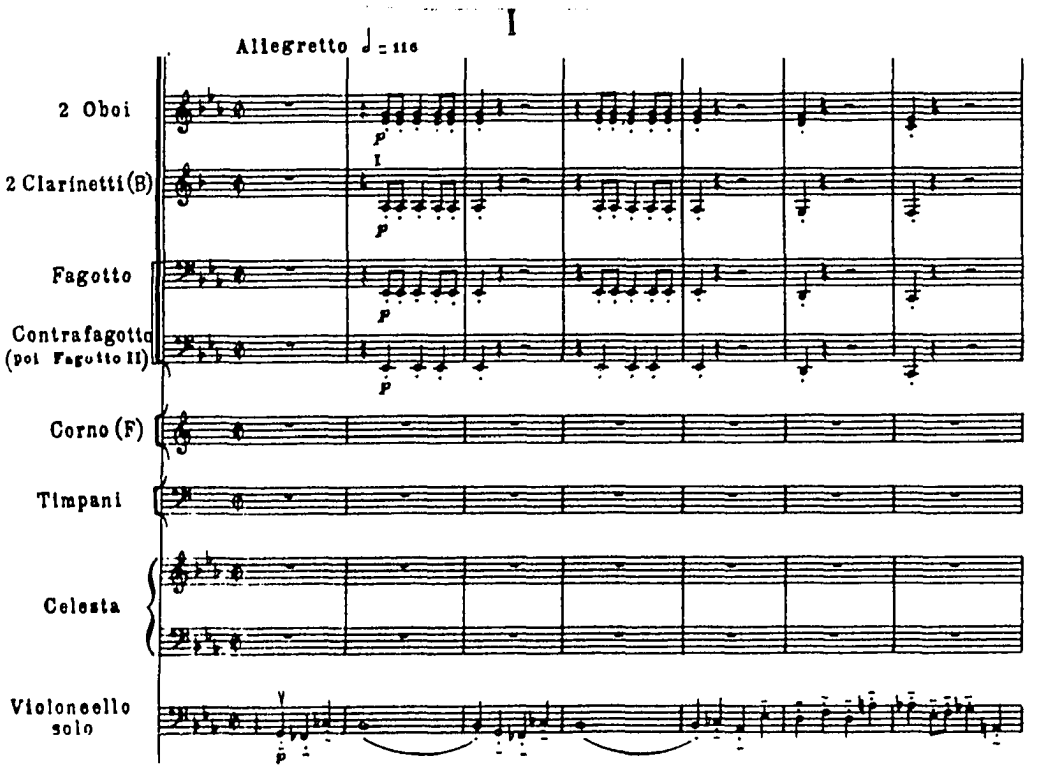
TRANSITION



Both the linear material of this transition and its accompaniment are a quotation from the opening measures of the composer's Cello Concerto, opus 107. Example 5:17 shows the opening measures of the concerto.

Ex. 5:17

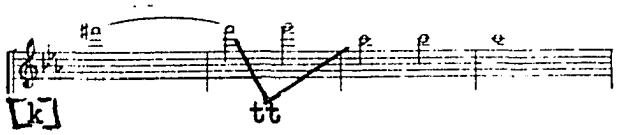
CELLO CONCERTO: Mvt. 1 (m. 1-7)



The aural impression of motive [u] is that of a modified inversion of the first four notes of [s]; this impression is aided by the rhythmic affinity of the two motives. As shown in example 5:18 motive [u] is also a modified retrograde of the contour of motive [k]; both motives [u] and [k] feature a prominent tritone.

Ex. 5:18

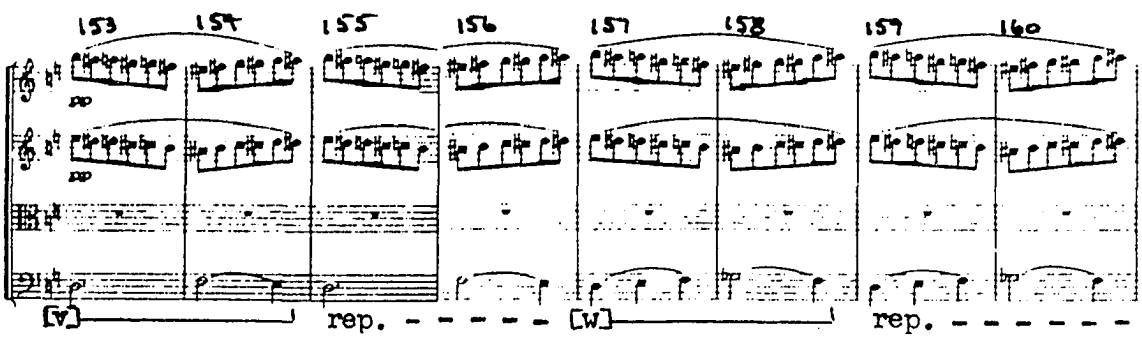
Mvt. 2 (m. 126-129)



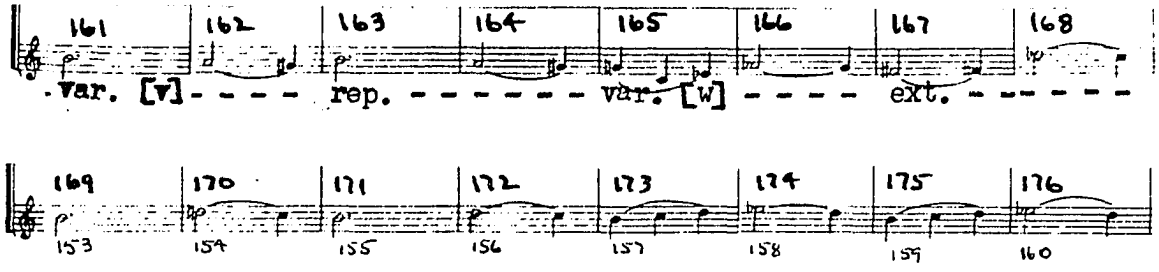
Mvt. 3 (m. 140-141)

The ascending semitones in the first violin at measures 151-152 and the second violin at measure 152 may be traced back to measures 135 and 138. Ascending chromaticism has been negligible in this movement thus far and these lines are preparing for the first and second violin accompanimental lines of theme IIa as shown on the following line score.

THEME IIa

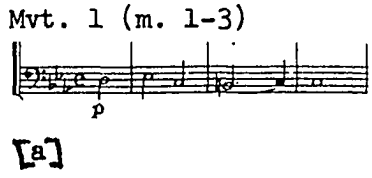


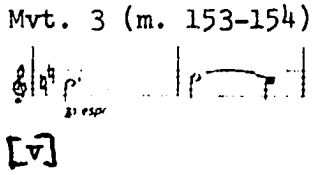
THEME IIa continued

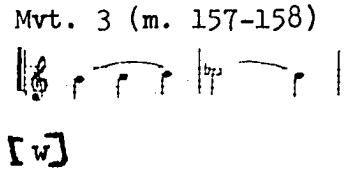


The details of motivic manipulation are shown on the line score. As shown in example 5:19, motives [v] and [w] are descendants of the D-S-C-H motive. It is also noted that both the semitone contour and the doubling at the perfect fifth by the first and second violin are implicit in the prominent intervals of motive [u].

Ex. 5:19



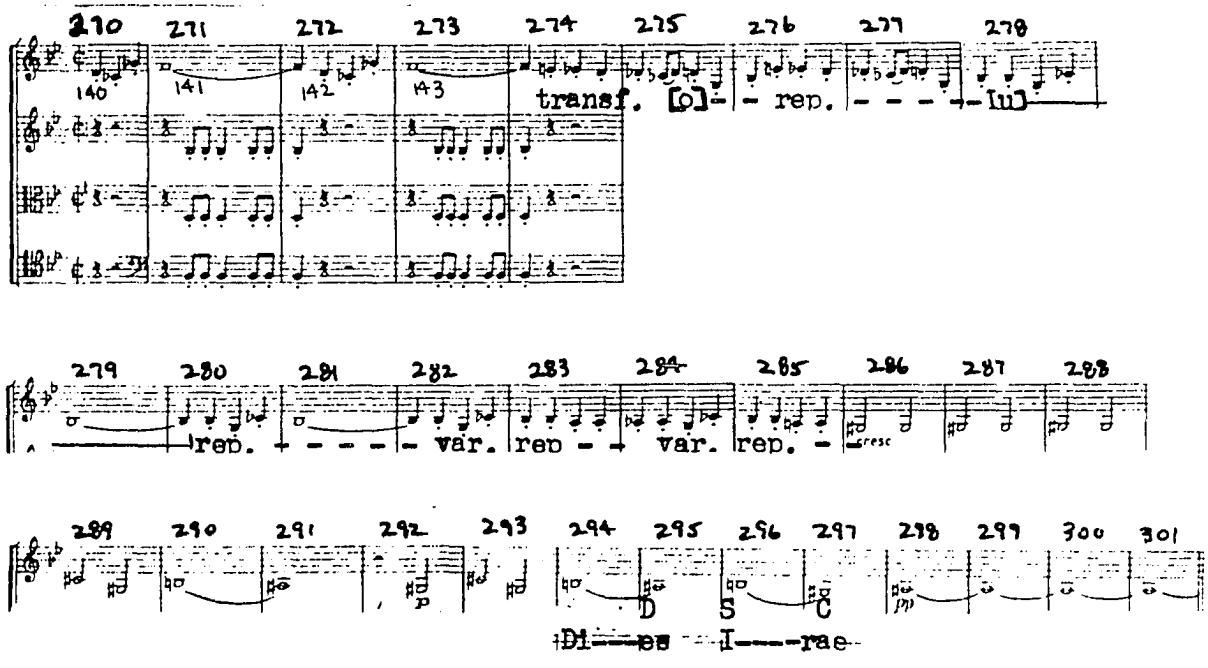




Motive [v] emphasizes the fourth, first, and third pitches of motive [a] while [w] is a permutation of [a]. At the same time [w] is also a variation of [v] accomplished by expansion of the prominent minor third of [v] to a major third.

The introduction (m. 1-16) recurs at measures 190-205; at measures 206-269 all of the prominent motives and themes of thematic area I recur in the order of their original statement. While there is a shortening of material by deletion of measures (primarily measures 29-37 and 47-66 of theme Ia, 75-89 of theme Ib, and 117-129 of theme Ic) no new techniques affecting unity were observed.

TRANSITION



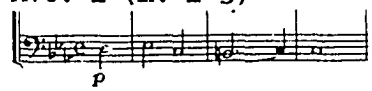
Measures 270-301 serve as a transition to movement four which follows without pause. As shown on the line score this transition begins with measures 140-143 of the transition to thematic area II. Aural prominence is thus given to motive [u]. This is important for, as will be observed in the examination of movement four, motive [x] (the initial aural stimulus of movement four) is a transformation of [u].

Summary

Previous observations that the D-S-C-H motive is the primary unifying force among the linear materials of this quartet are reinforced by the initial aural stimulus of movement three. As shown in example 5:20 the D-S-C-H motive continues as a strong unifying factor among the prominent motives of this movement.

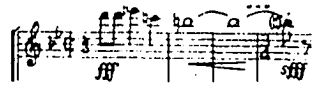
Ex. 5:20

Mvt. 1 (m. 1-3)



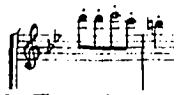
[a] b-c-d-e^b

Mvt. 3 (m. 1-4)



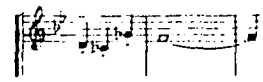
transf. [a] b-c-d-e^b

Mvt. 3 (m. 20-21)



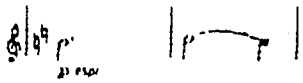
[p] a transf. of [a]
b-c-d-e^b

Mvt. 3 (m. 140-141)



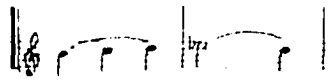
[u] b/c^b-(c)-d-(e^b)-f-g^b

Mvt. 3 (m. 153-154)



[v] b-c-d-(e^b)

Mvt. 3 (m. 157-158)

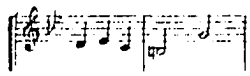


[w] a permu. of [a]
b-c-d-e^b

Motives [p], [v], and [w] feature the b-e^b pitch frame of motive [a] while [u] expands the alternating pattern to include f and g^b.

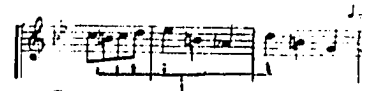
Ex. 5:20 continued

Mvt. 3 (m. 120-121)



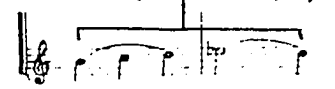
[s] a transf. of [a]

Mvt. 3 (m. 124-126)



[t]

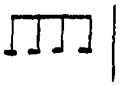
Mvt. 3 (m. 157-158)



[w]

Although motives [s] and [t] are not confined exclusively to an alternating scale, they both exploit the b-e^b pitch frame of motive [a]. In addition, [t] permutates the b-c-d-e^b pitches so that they are prepared to emerge at measures 157-158 as motive [w].

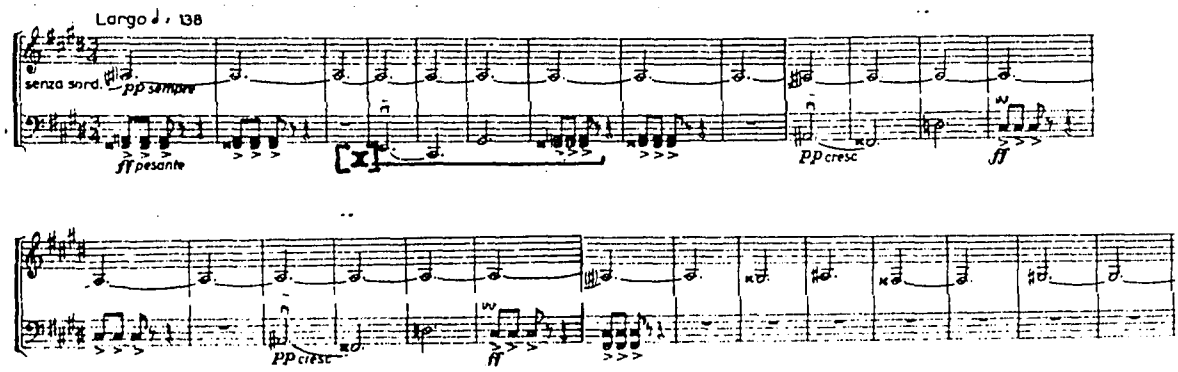
The second prominent aural event of theme A of movement one was the use by the composer of direct quotations from earlier compositions. This phenomenon was observed in this movement by the use of a theme from the opening measures of the CELLO CONCERTO, opus 107 (see example 5:16).

While chromaticism is a less characteristic sound of this movement than it was of movement one, motives [o] and [r] do display consecutive semitone movement. Motives [o] and [t] share a common rhythm (); the chromatic movement of [o] infects [t] and [u] respectively in their various recurrences during theme Ic and the transition to thematic area II. From these varied recurrences emerges the prominent chromaticism of the first and second violin lines of theme IIa. Chromatic motion is neither a prominent characteristic of the recurrence of thematic area I nor of the transition to movement four.

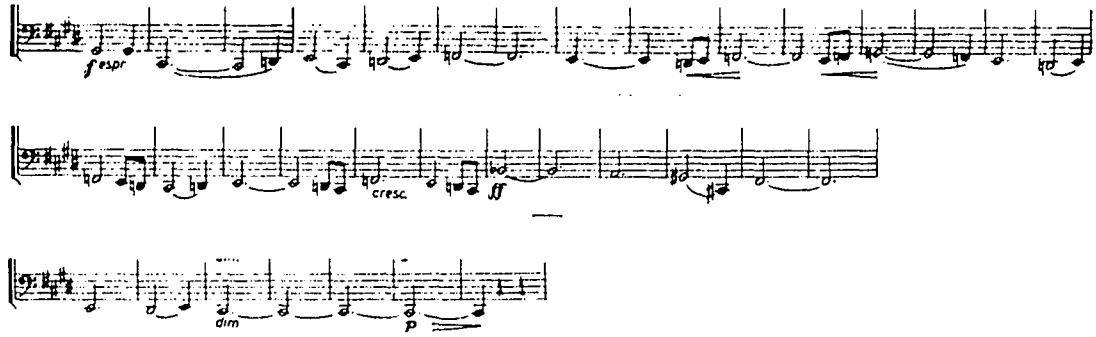
THEMATIC INDEX

Eighth Quartet
Movement four

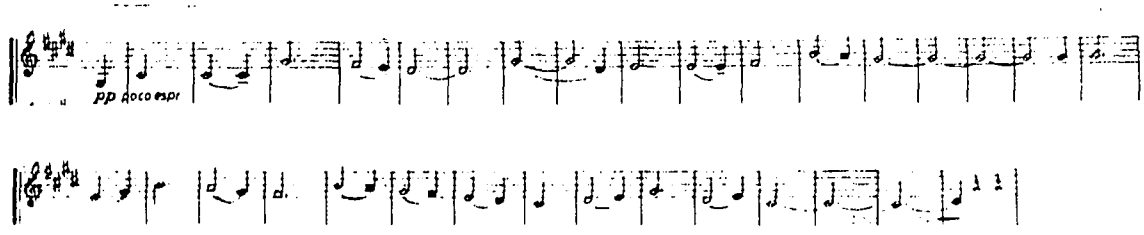
INTRODUCTION



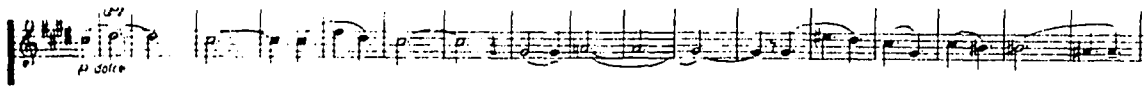
THEME A



THEME B



THEME C



GRAPHIC ANALYSIS OF FORMAL STRUCTURE

Fourth Movement — Largo - C# - Part Form - 187 measures - $\frac{3}{4}$ meter.

Introduction
[x]
1
C#:

Theme A
28
C#:

transition
[x] [a]
62

Theme B
75
C#:

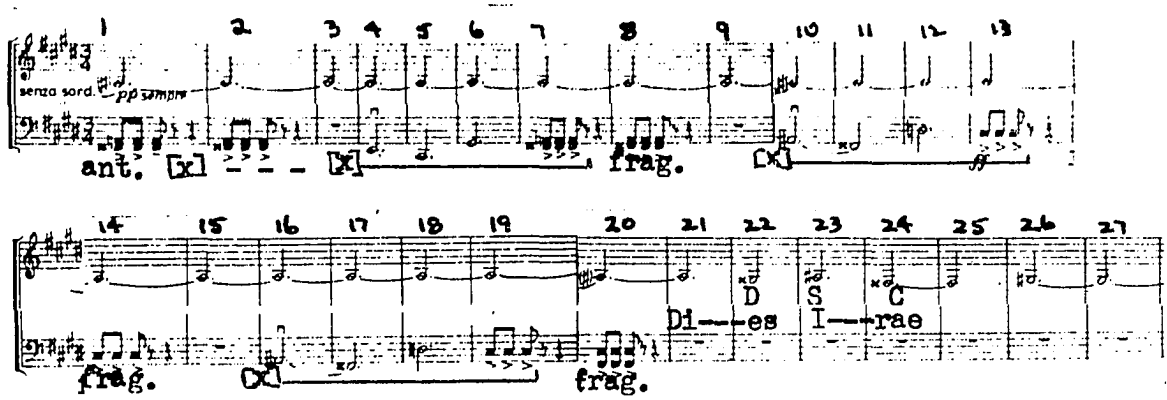
transition
[i]
108

Theme C
133
F#:

Coda
[q] theme B
161
C#:

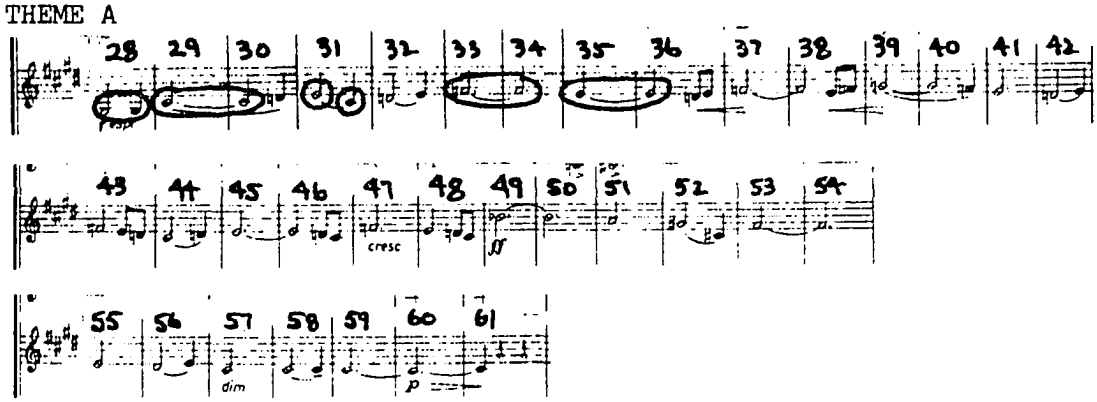
transition to Movement Five
[a]
180

INTRODUCTION



Motive [x] is a transformation of [u] accomplished primarily by augmentation and substitution of legato for the original staccato. Of no small importance to this change of character is the pianissimo of the first three notes of [x] followed by the fortissimo accented repetition of its final pitch. The wrathful outcry of these opening measures is brought to a close by the Dies Irae tone pattern in the first violin at measures 21-25.

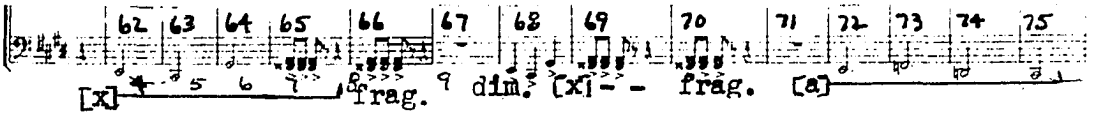
THEME A



Unlike all previous themes of this quartet, theme A is a smoothly wrought contour which does not rely on motivic manipulation for its growth. The alternating scale basis (c#-d-e-f-g-(a^b)-b^b) of measures 28-50 is the primary means of unifying theme A into the total

structure. In addition to the use of the alternating scale, as shown by the circled notes on the line score the basic contour of the first phrase outlines a major versus minor dichotomy: c# major triad versus c# minor triad. This is an exploitation of a characteristic of the alternating scale which is first described by motive [a] in which the minor third (e^{b}-c) expands to a major third and contracts immediately to the original minor third. A number of the prominent motives of movements two and three were also found to display this phenomenon, notably [i], [j], [n], [p], [s], [t], and [w].

TRANSITION



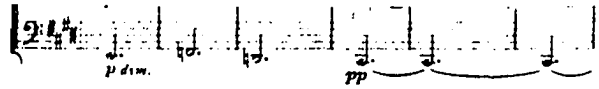
As shown on the line score this transition is constructed from motive [x]. Measures 62-67 are a recurrence of measures 4-9. At measures 72-75 the D-S-C-H motive is elided with the beginning of theme B in the first violin at measure 74. As shown in example 5:21 the emergence of the D-S-C-H motive in this movement has been anticipated by two prominent contours.

Ex. 5:21

Mvt. 4 (m. 21-25)

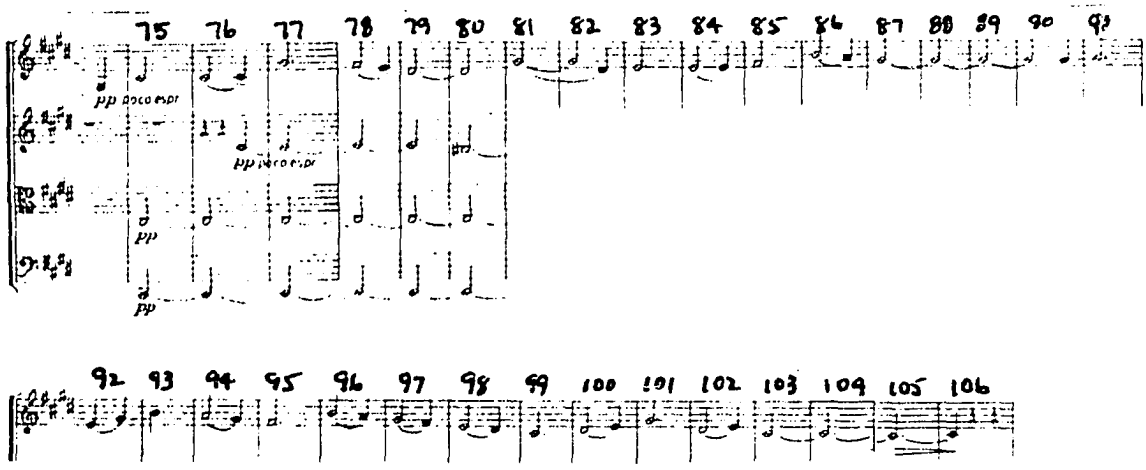
Mvt. 4 (m. 50-55)

Mvt. 4 (m. 72-77)



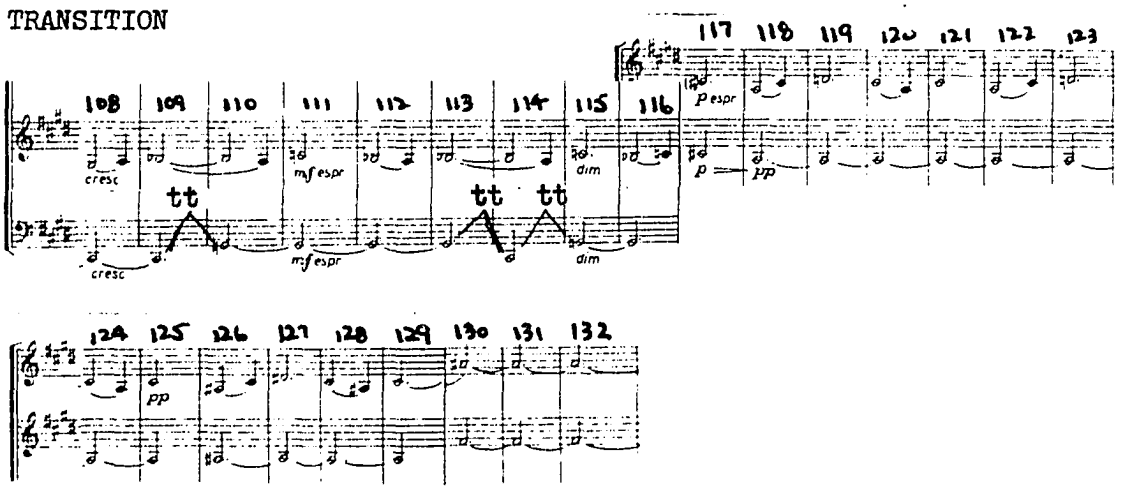
The statement of the signature motive at measures 72-77 is prepared by an anticipation of its prominent ascending minor second and descending minor third at measures 22-25. The complete D-S-C-H contour with added pitch b# is stated at measures 50-55.

THEME B



The noted Russian musicologist Yury Keldysh[2] has identified theme B as the Russian song "Crushed by the Weight of Bondage." Shirinsky[3] supplies the translation as "Languishing in Prison" and says that it is a song of the Russian Revolution. A common style and tonal center accommodate the song to its surroundings in this movement.

TRANSITION



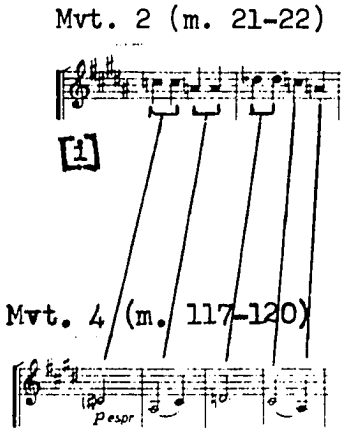
The tritone c#-g at measures 108-115 in the cello suggests an influence of the prominent tritone of motive [x]. The second violin line at measures 108-132 (with the exception of the initial g#) is accommodated within an alternating scale from f#: f#-g-a-b^{b}-c-c#-d#-e. This f# is to become the tonal center of theme C at measure 132. The first violin contour at measures 117-132 (except for the d at measures 119 and 123) also subscribes to this alternating scale. Example 5:22 compares the transformation of [i] at measures 117-120 in the first violin with the original statement of motive [i].

---

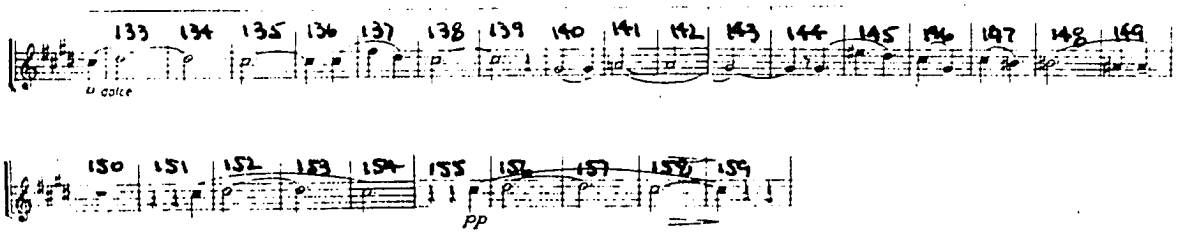
[2]Keldysh, p. 228.

[3]V. Shirinsky, notes in volume II of the Shostakovich quartets one through twelve. (Opa-Locka, Florida: Edwin F. Kalmus, n.d.), p. 26.

Ex. 5:22

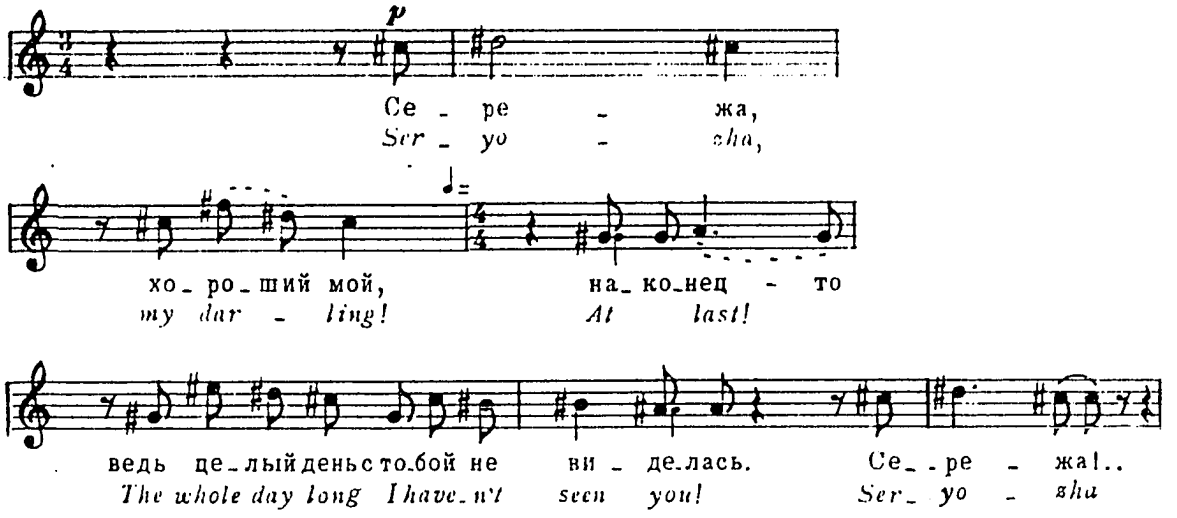


THEME C

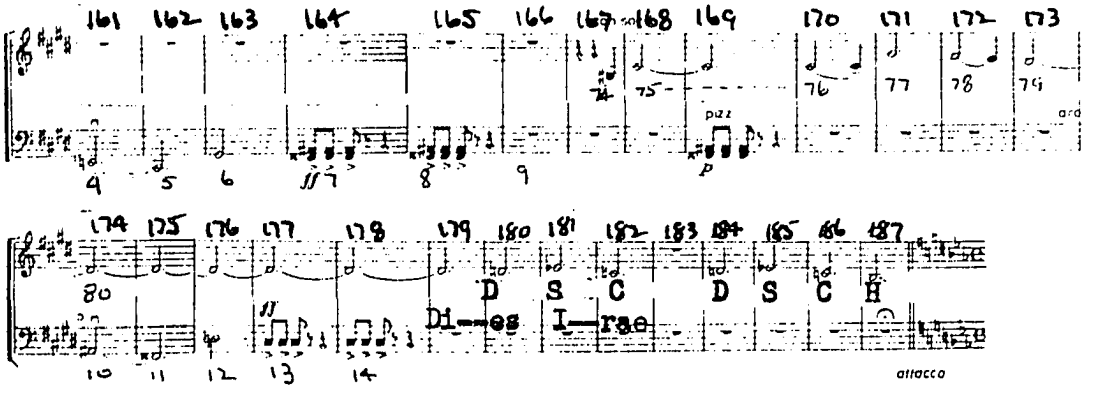


Theme C is another in the series of quotations from the composer's earlier compositions. This melody is from the opera Katerina Ismailova, it is sung by the heroine Katerina shortly after the opening chorus of act IV. The original melody is shown in example 5:23.

Ex. 5:23



CODA



There is no new linear material in the coda; the measure numbers of the original statements are shown on the line score. The linear material in the lower three instruments originated in the introduction of this movement while the first violin contour is the opening phrase of theme B which is extended here by a fragment of the D-S-C-H motive. The ear recognizes that this extension creates a recurrence of the Dies Irae tone pattern of measures 21-24 of the introduction.

Summary

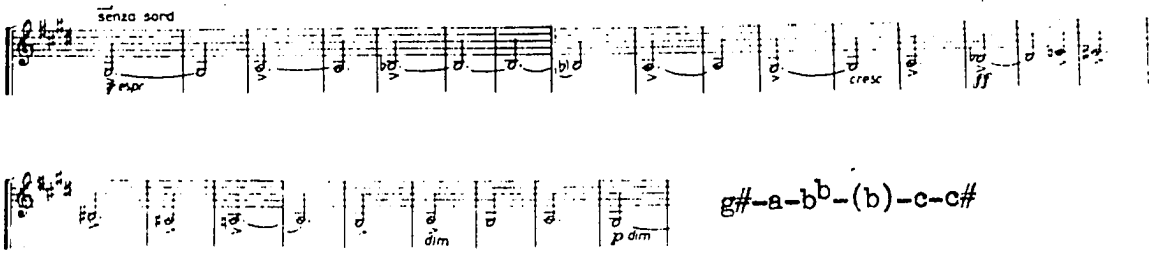
The influence of all three of the prominent aural events of theme A of movement one are present in this movement: (1) the D-S-C-H motive and its attendant alternating scale, (2) the quotations from the composer's earlier compositions, and (3) the chromatic implications of the first seven measures of movement one.

This investigation has shown a decided change of emphasis among these three aural events in favor of an increase in the use of borrowed material for this movement. The most prominent sounds of the introduction are: (1) motive [x] which is a transformation of motive [u] which is quoted from the Cello Concerto, opus 107, and (2) the Dies Irae tone pattern. Motive [x] also forms the transition at measures 62-70. Although the revolutionary song which serves as theme B is not the composer's original work, like the tone pattern of the Dies Irae it is borrowed from an outside source. Theme C is a quote from Katerina Ismailova. The coda makes use of motive [x], the revolutionary song, and the Dies Irae tone pattern.

Although the primary linear materials show little chromatic inclination, subsidiary and accompanimental lines are often influenced by chromaticism. Two extended chromatic contours are shown in example 5:24.

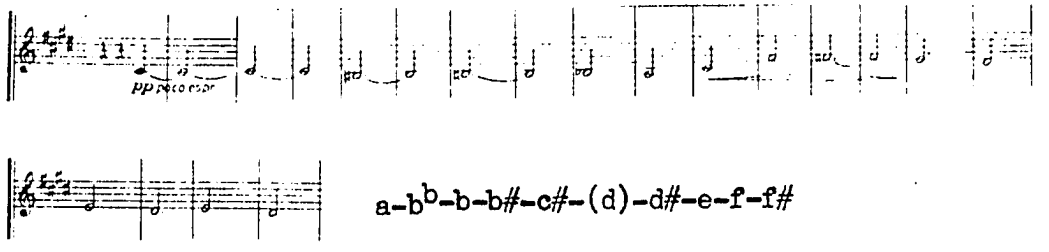
Ex. 5:24

Mvt. 4 (m. 36-61)



g#-a-b^{b}-(b)-c-c#

Mvt. 4 (m. 76-95)



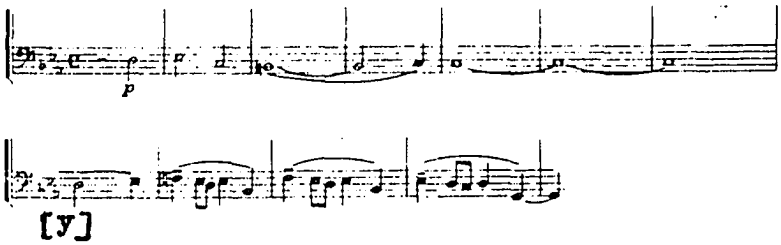
a-b^{b}-b-b#-c#-(d)-d#-e-f-f#

The D-S-C-H motive is stated only twice in this movement (m. 72-75 and 184-187). Emergence of the signature motive was shown in example 5:21 (p. 149). Except for theme A the influence of the alternating scale is negligible in this movement.

THEMATIC INDEX

Eighth Quartet
Movement five

FUGUE SUBJECT and COUNTERSUBJECT



GRAPHIC ANALYSIS OF FORMAL STRUCTURE

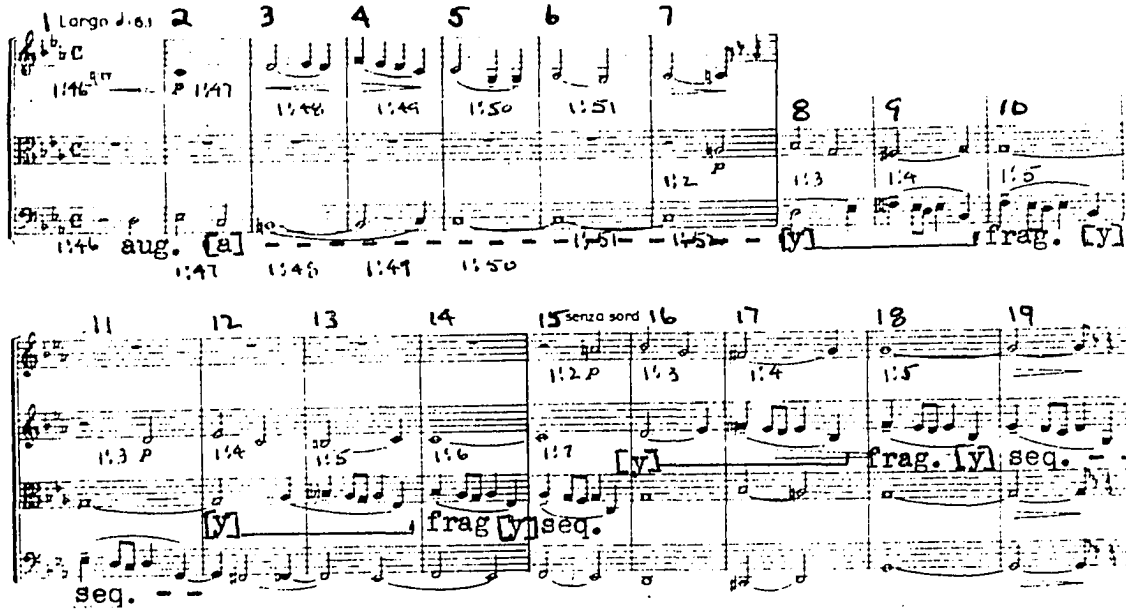
Fifth Movement — Largo - C - Fugue - 88 measures - $\frac{4}{4}$ meter.

Exposition
1
C:

Development
20

Coda
[a] [d]
54
C:

EXPOSITION



The original measure numbers of recurring linear material are shown on the line score. The first violin and cello begin this movement with a recurrence of measures 46-51 of movement one.

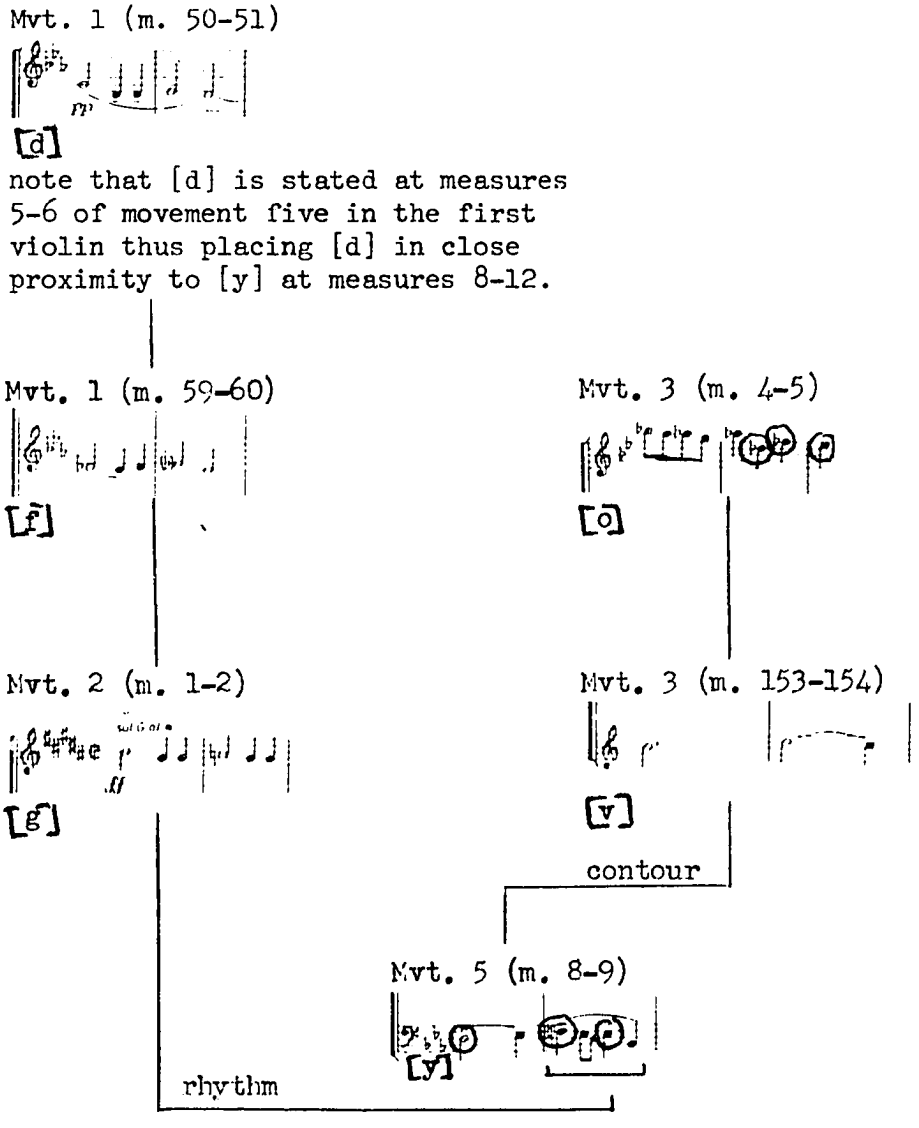
In comparing the exposition of this fugue with the fugato beginning of movement one, three prominent differences are noted: (1) in the fugato of movement one the entrances of motive [a] are more closely spaced, (2) in movement one [a] was stated at the fifth, the octave, and the fourth whereas in movement five [a] is stated only at the octave and the fifth, and (3) the fugue exposition affects the ear as less chromatic. The latter is due to a less concentrated presentation (longer temporal span) of the twelve tones than occurred in the fugato of movement one.

Number three above would seem to be a direct result of numbers one and two. Due to the longer distance between entrances of motive [a] the time it takes to present all twelve tones is lengthened; thus $\underline{a^b}$ and

c# (pitches 10 and 11) do not occur until measures 12 and 17 respectively. The fact that the statement of motive [a] at the fourth (g-a^b-f-e) in movement one is replaced here by a second statement at the fifth accounts for the omission of the pitch e.

As shown in example 5:25 the familiar sound of the counter-subject (motive [y] at measures 8-12) is due to its subtle relationships with other prominent motives.

Ex. 5:25



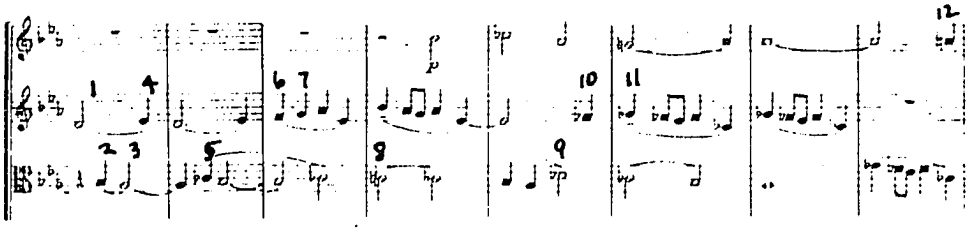
Ex. 5:25 continued

> Motive [y] is a transformation by indirect affinity: its contour is related to the several motives through emphasis of their most characteristic sounds.[4] This is not only to say that motive [y] is equal to the rhythm of [d], [f], and [g] plus the contour input of [o] and [v]. In the gestalt sense [y] equals more than the sum of its relationships to the several influential motives. These relationships are logical and they account for the familiar sound of motive [y] at the same time that [y] appears to be a new contour.

Although no new techniques of motivic manipulation affecting unity were observed in the thirty-four measures of the development, there is an increase in the use of the twelve tones as shown in example 5:26.

Ex. 5:26

Mvt. 5 (m. 20-27)



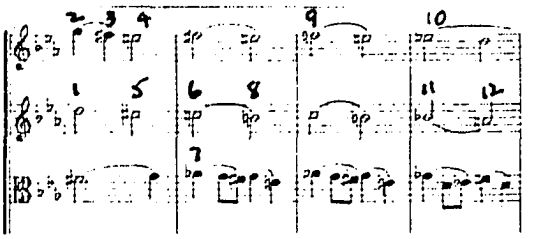
The twelve tones are distributed among three instruments during the course of eight measures.

---

[4]Rudolph Reti, The Thematic Process in Music (London: Faber and Faber, 1961), pp. 240-241. Reti calls this sort of relationship a familiar phenomenon. " . . . by singling out certain notes, one kinship becomes apparent; by singling out others, another . . . two shapes which as such have nothing in common can nonetheless become organic parts of an architectural whole through a mediator, a third shape related to both." In the present case through their individual relationships to motive [y], motives [d], [f], [g], [o], and [v] now make contributions to unity on a higher architectonic plane than had been expected up to this point.

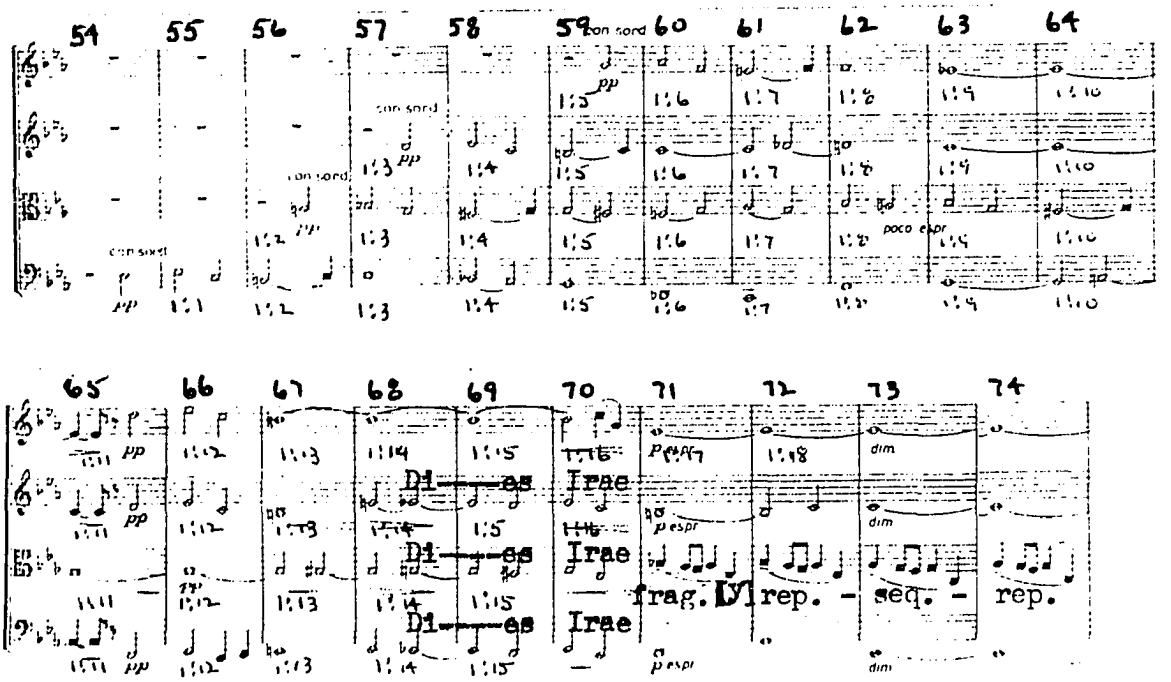
Ex. 5:26 continued

Mvt. 5 (m. 39-42)

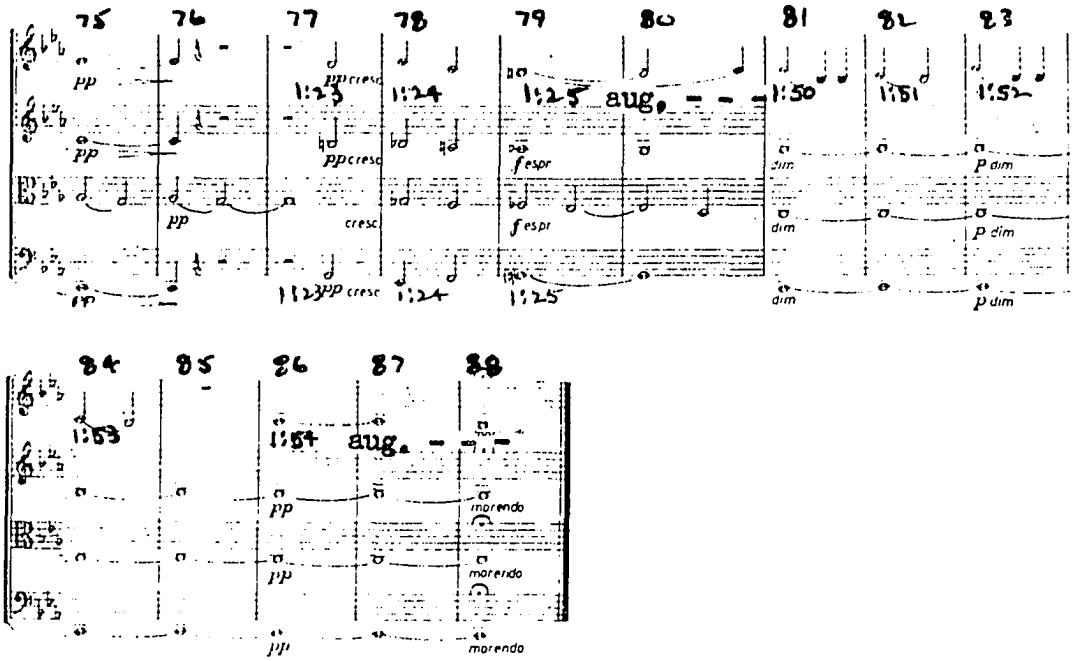


The twelve semitones are distributed among three instruments during the course of four measures and chromatic movement is evident in the first and second violin. Eleven of the twelve tones are supplied by the first and second violin while the viola supplies the twelfth tone $\underline{a^b}$.

CODA



CODA continued

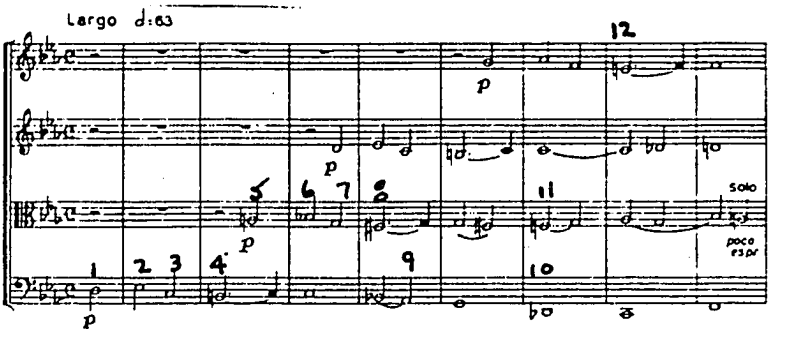


As shown on the line score measures 54-70 of the coda are a recurrence of the prominent sounds of the initial measures of movement one. Since the entrances of motive [a] were spaced farther apart in the fugue exposition (see p. 156) the effect of this return to the closer entrances of the fugato of movement one (see p. 100) is that of stretto. The only remaining reference to the composer's first symphony is the trumpet motive from measures 1-2 which recurs in the first violin at measures 69-71

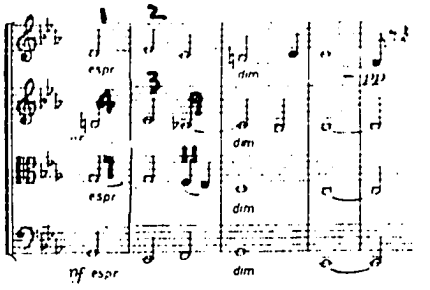
At measures 77-80 the recurrence of measures 23-25 of movement one have been varied so that all of the twelve tones (except c#) displayed by the fugato treatment of motive [a] are used to harmonize [a]. Example 5:27 compares the fugato of motive [a] with the harmonization of [a] at measures 23-25 of movement one and measures 77-79 of movement five.

Ex. 5:27

Mvt. 1 (m. 1-8)

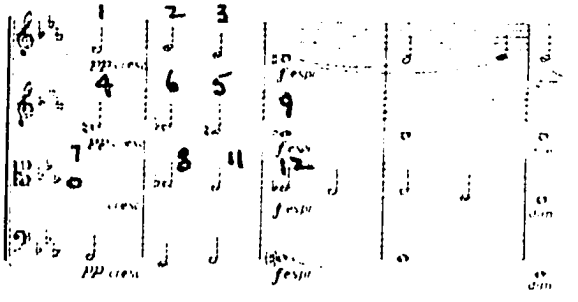


Mvt. 1 (m. 23-26)



This harmonization of motive [a] omits five of the twelve tones as presented by the fugato of motive [a]. The numbering of the pitches shows that a, b^b, f#, c#, and e are missing.

Mvt. 5 (m. 77-81)



By substitution of e^b minor and f major triads respectively for the c minor and f minor triads of the first movement harmonization all twelve tones are used except c#.

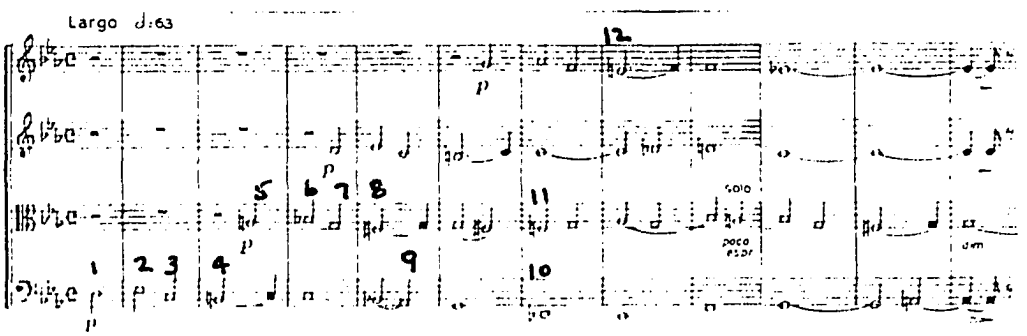
Summary

The three prominent aural events of theme Ia of movement one were all observed in movement five although in different proportions. Due to the nature of the fugue procedure the D-S-C-H motive ([a]) is a very prominent sound in its position as subject. Motive [a] is more prominent in this movement than it is in movement one: sixteen statements among the eighty-eight measures of movement five as compared to thirteen statements among the one hundred and twenty-six measures of movement one.

The implied chromaticism of the fugue exposition is somewhat more diffused than it was for the fugato beginning of movement one. Example 5:28 allows comparison of the opening fugato of movement one with the fugue exposition of movement five.

Ex. 5:28

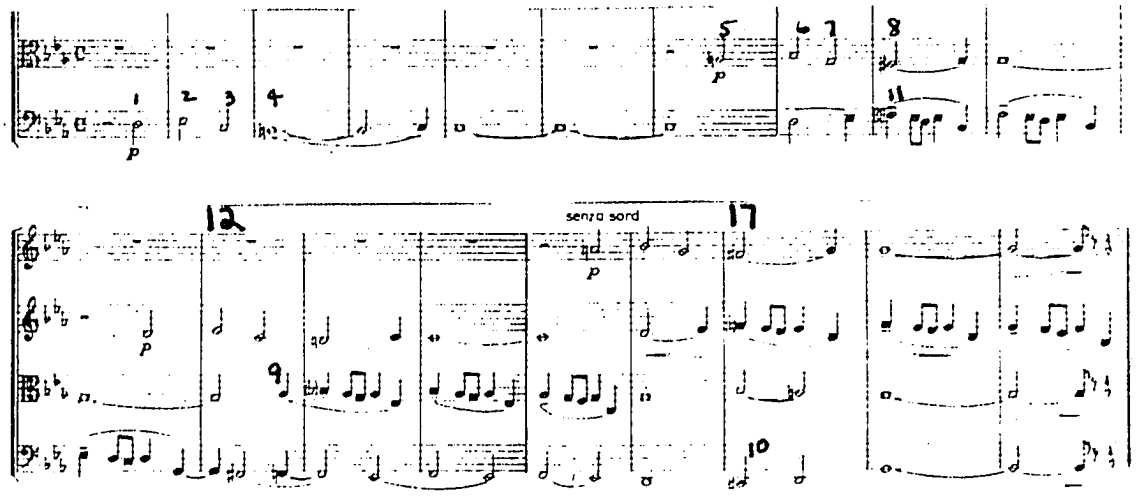
Mvt. 1 (m. 1-11)



The twelve tones appear among three instruments within the first seven measures.

Ex. 5:28 continued

Mvt. 5 (m. 1-19)



Ten of the twelve tones appear among three instruments within the first twelve measures. The pitch c# is not heard until measure 17 while e does not appear here at all.

Example 5:26 showed that presentation of the twelve tones becomes more concentrated again in the development. In example 5:27 eleven of the tones (c# is omitted) are concentrated within three measures in a harmonization of motive [a].

In the opening fugato of movement one the selected lines (primarily motive [a]) and their pitch levels bring about the twelve tones. In the closing measures of movement five the selected vertical structures which harmonize [a] bring about eleven of the twelve tones. In this manner the twelve tones and their original source are artfully combined. At the same time this phenomenon offers convincing proof that the chromatic influence of theme A of movement one is very much alive right to the final authentic cadence which closes this quartet.

Except for the signature motive, quotation from the composer's

earlier compositions is negligible in this movement. The only other instance of borrowed material is the statement at measures 69-71 of this movement of the trumpet motive from measures 1-2 of the composer's First Symphony, opus 10.

Only one prominent new contour was observed in movement five: motive [y]. As was shown in example 5:25, motive [y] displays an influence of rhythm and contour from several earlier motives; this accounts for its familiar sound.

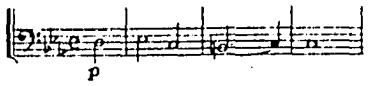
Summary of Unifying Factors Among Motives And Themes of the Eighth Quartet

During this investigation of the eighth quartet, attention was directed on numerous occasions to the on-going influence of the three most prominent aural events of theme A of movement one: (1) the D-S-C-H motive and its attendant alternating scale, (2) the use by the composer of quotations from his earlier compositions, and (3) the use of all twelve tones divided among three instruments within the first seven measures.

The detailed analysis has shown that the D-S-C-H motive is the most prominent linear influence among the thematic materials of this composition. By sheer weight of their many recurrences, the signature motive and its several transformations are the most prominent sounds of this quartet. Since a major portion of the recurrences of the signature motive and its family of transformations are stated within the original b-e^b pitch frame of motive [a] their aural impact is the more impressive. Example 5:29 traces the influence of the D-S-C-H motive and its attendant alternating scale among the prominent motives of the eighth quartet.

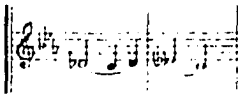
Ex. 5:29

Mvt. 1 (m. 1-3)



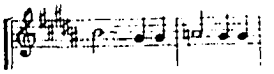
[a] b-c-d-e^b

Mvt. 1 (m. 59-63)



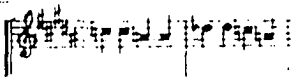
[f] c-d^b-e^b-(e)

Mvt. 2 (m. 1-2)



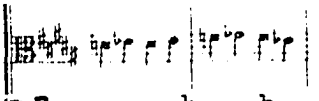
[g] g#-a-b-(c)

Mvt. 2 (m. 21-22)



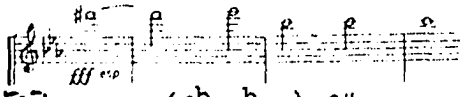
[i] b-(c)-d-e^b

Mvt. 2 (m. 80-81)



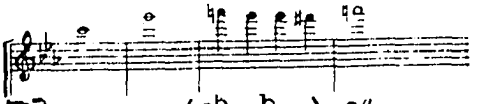
[j] d-e^b-f-g^b

Mvt. 2 (m. 126-129)



[k] c-(d^b-e^b-e)-f#-g

Mvt. 2 (m. 134-137)

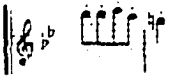


[l] c-(d^b-e^b-e)-f#-g-a
an expanded retrograde of [k]

Mvt. 2 (m. 289-290)

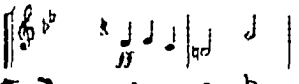
[n] d-e^b-f-g^b
a transformation of [j]

Mvt. 3 (m. 20-21)



[p] b-c-d-e^b
a transformation of [a]

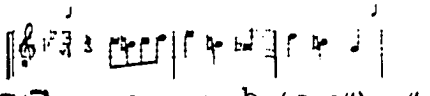
Mvt. 3 (m. 120-121)



[s] b-c-d-e^b

a transformation of [a] whose final pitch g does not belong to the alternating scale.

Mvt. 3 (m. 124-126)

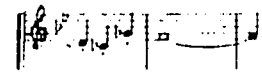


[t] b-c-d-e^b-(f-f#)-g#

a transformation of [a] accomplished by diminution, permutation, and added pitches.

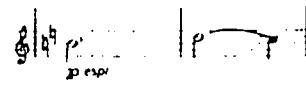
Ex. 5:29 continued

Mvt. 3 (m. 140-141)



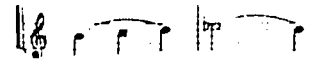
[u] c^{b}-(c)-d-(e^{b})-f-g^{b}
a modified retrograde of [s]

Mvt. 3 (m. 153-154)



[v] b-c-d-(e^{b})

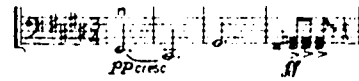
Mvt. 3 (m. 157-158)



[w] b-c-d-e^{b}

A transformation of [v] by expansion of its basic minor third to a major third and addition of pitches. Motive [w] is also related to [t] and [u] by virtue of their common basic contour which is an ascending diminished fourth followed by a descending minor second; this interval pattern is also prominent in motives [i], [j], and [n].

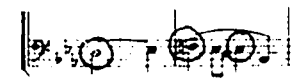
Mvt. 4 (m. 4-7)



[x] c#-(d)-e-(f)-f^{x}-g#

The a of the double-stop does not belong to the implied alternating scale. Since [x] is a transformation of [u] accomplished primarily by augmentation, the f^{x} is the important final pitch.

Mvt. 5 (m. 8-9)



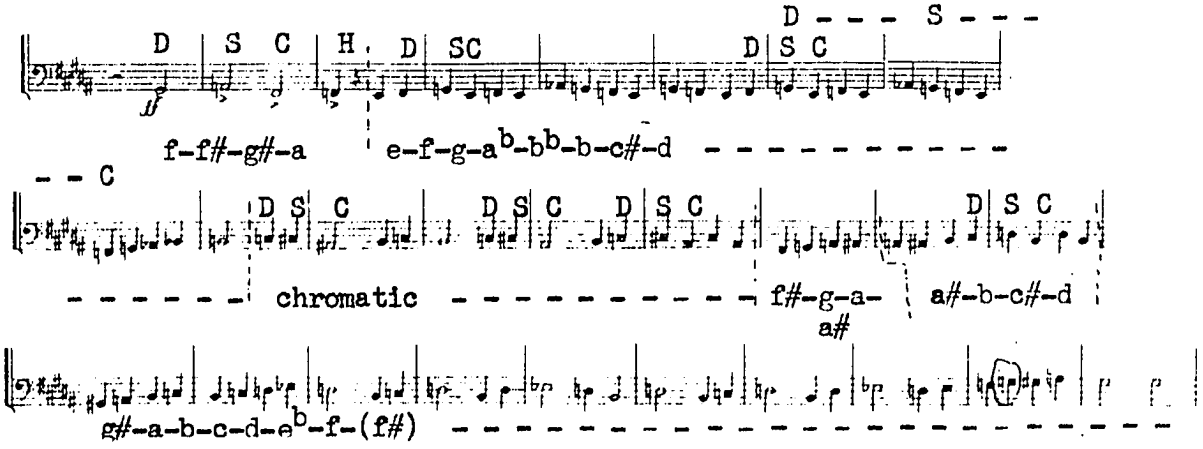
[y] not alternating scale

Motive [y] belongs to the signature motive family by virtue of its filling of the basic contour of [v].

In addition to their influence upon the contour of a number of prominent motives, the D-S-C-H motive and its attendant alternating scale were observed as the building blocks for a number of longer contours. The lines shown in example 5:30 have been selected as being among the more interesting manifestations of the influence of the D-S-C-H motive and/or the alternating scale within longer contours.

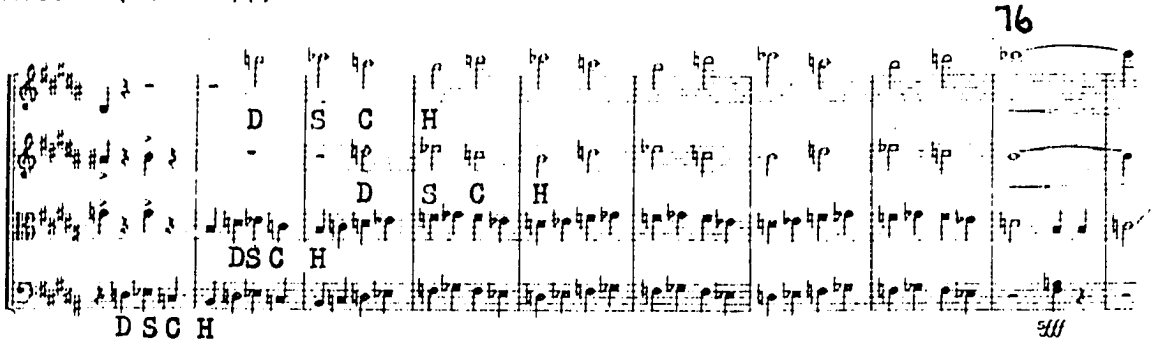
Ex. 5:30

Mvt. 2 (m. 32-58)



This cello line is constructed primarily by continuous manipulation of the alternating pattern at several different pitch levels. Subtle aural prominence is also given to the D-S-C-H motive as shown on the example.

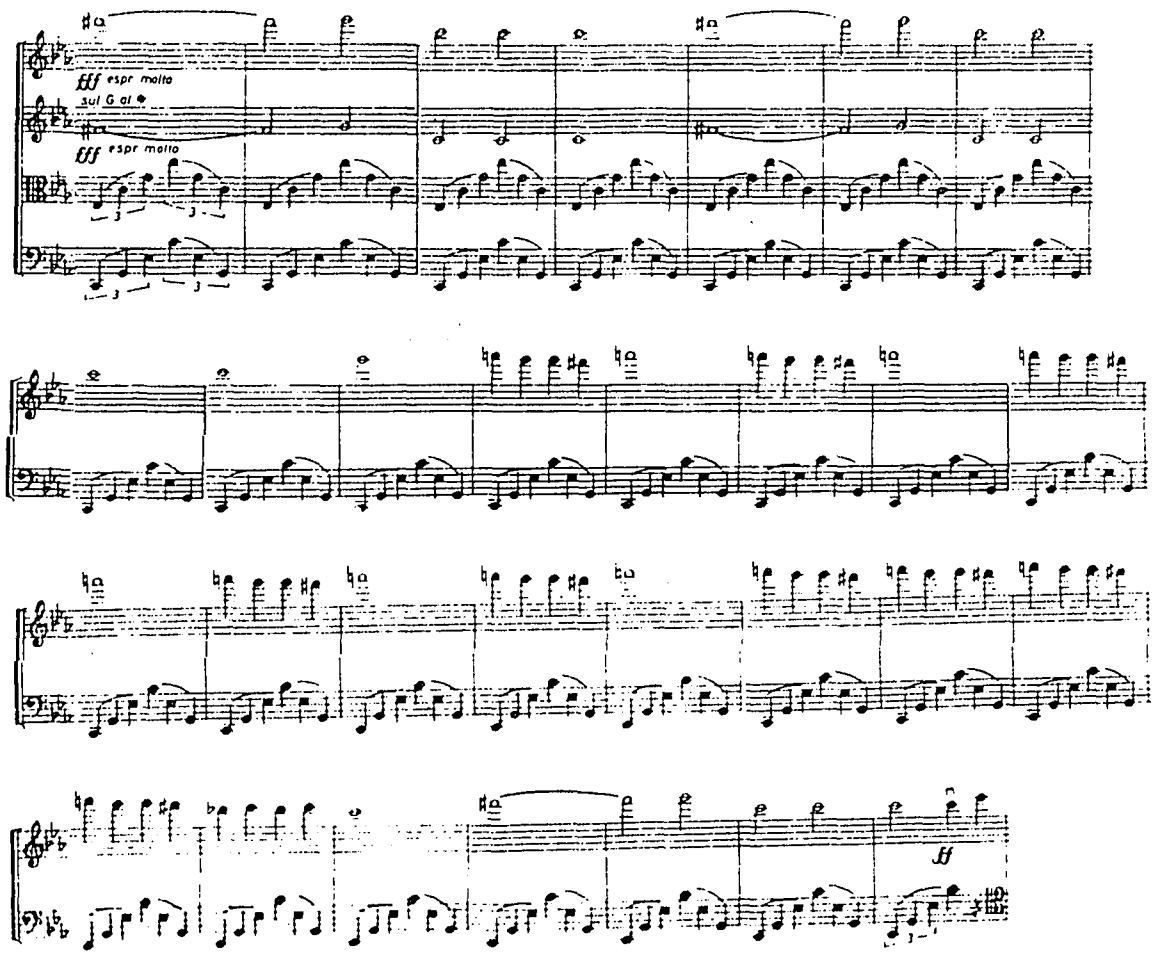
Mvt. 2 (m. 68-77)



Ex. 5:30 continued

All voices feature the D-S-C-H motive at its original b-e^{b} pitch frame. The first and second violin present a canon at the octave while the viola and cello extend the alternating scale to include f and g^{b} and finally to a in the cello at measure 76.

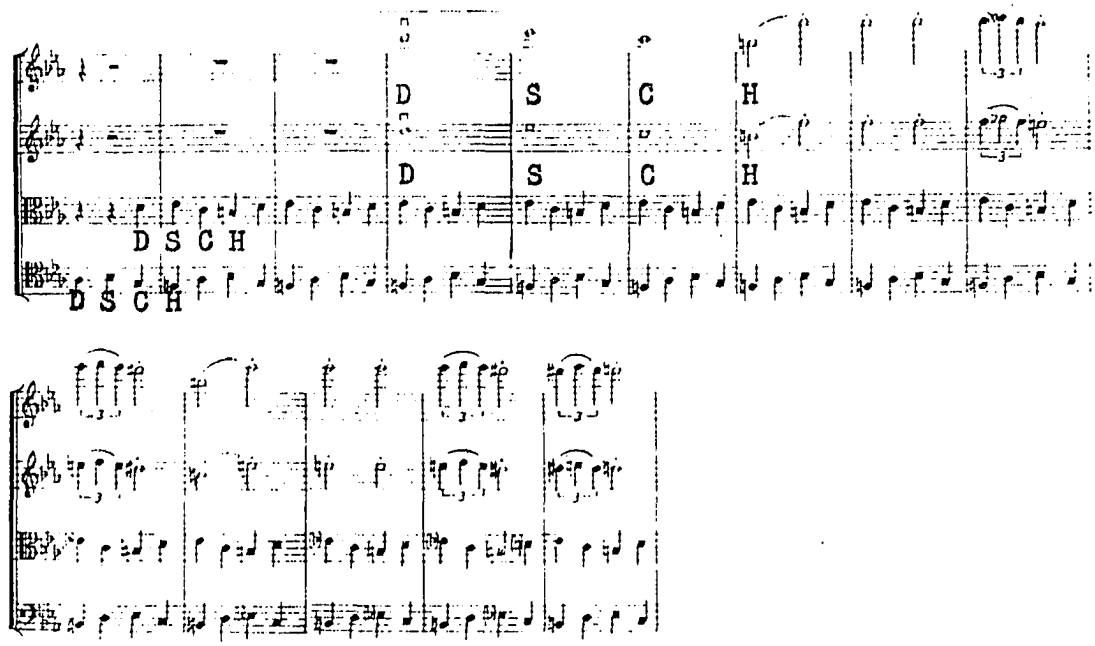
Mvt. 2 (m. 126-155)



All of the pitches of theme IIa and its accompanying c minor triad are accommodated within an alternating scale from the C tonal center: c-d^{b}-e^{b}-e-f#-g-a-b^{b}. Referral to the line score (pp. 124-125) shows that the c# full diminished seventh chord which is used in the recurrence of theme IIa is also accommodated within this alternating scale.

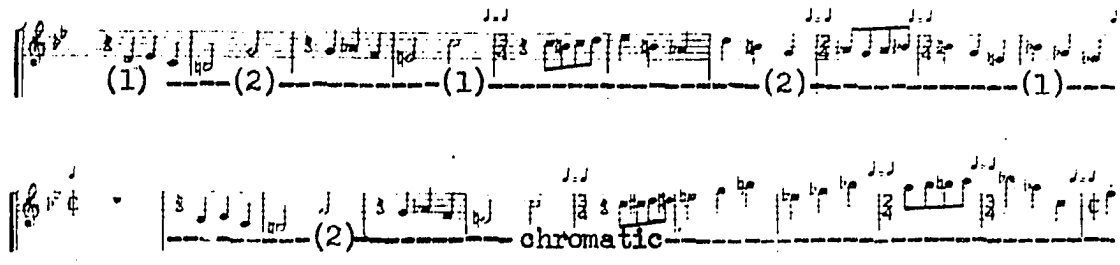
Ex. 5:30 continued

Mvt. 2 (m. 175-188) - Theme IIb



The viola and cello use a diminution of the D-S-C-H motive to construct an ostinato accompaniment for theme IIb in the first and second violin. An augmentation of the signature motive is the initial sound of theme IIb.

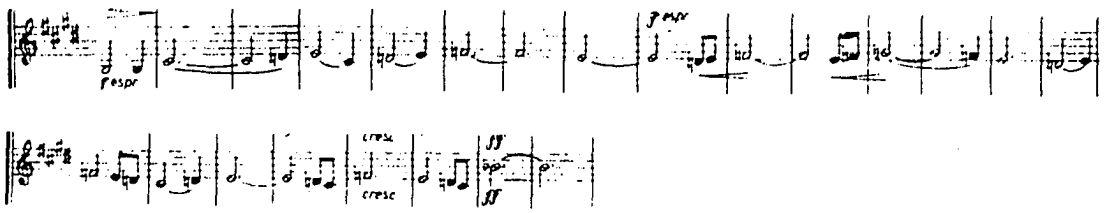
Mvt. 3 (m. 120-134) - Theme Ic



As shown on this excerpt theme Ic is constructed by alternate use of two different alternating scale patterns: (1) b-c-d-e^{b}-f-g^{b}-a^{b}-a and (2) e-f-g-a^{b}-b^{b}-b-c#-d.

Ex. 5:30 continued

Mvt. 4 (m. 28-50)



The first twenty-three measures of theme A are accommodated within an alternating scale constructed from its C# tonal center: c#-d-e-f-g-a^b-b^b-b.

In the opening discussion of the first movement, attention was directed to the composer's quotation of themes from his earlier compositions. It was noted that the D-S-C-H motive itself is quoted from the composer's Tenth Symphony, opus 93 where this signature motive is one of the most prominent sounds of the third movement. Measures 13-23 of movement one of the quartet also quote from the introduction of the first movement of the First Symphony, opus 10. Movement two (m. 126-155 and 324-348) quotes from the fourth movement of the Piano Trio, opus 67. Movement three (m. 140-146) quotes from the opening measures of the Cello Concerto, opus 107. Motive [x] which is an augmentation of the initial motive of this concerto is prominently featured in the fourth movement of the eighth quartet. The revolutionary song "Crushed by the Weight of Bondage" is used as the second theme of movement four while the third theme is a quotation from the final act of Katerina Ismailova. The fifth movement (m. 69-71) quotes the initial motive of the first symphony.

A third prominent aural phenomenon observed in the opening measures of the first movement is the presentation of the twelve tones of the chromatic scale. The twelve tones were distributed among the cello, viola, and first violin at measures 1-7. This phenomenon creates an atmosphere of restlessness in theme A which is transferred to theme B where the first violin presents eleven of the twelve tones at measures 28-37; the twelfth tone f is heard at measure 42. It was also observed that this chromaticism prepared the unexpected sound of the major seconds of theme C.

Although chromaticism was found to be less prominent in movement two, nevertheless, motives [h] and [m] do feature chromatic motion. In movement three semitone motion is prominent in motives [o] and [r]; as the movement unfolds the chromatic motion of these two motives gradually affects other motives (notably [t] and [u]). This process leads to total chromaticism in the voices accompanying theme IIa. While chromaticism was not a prominent sound of movement four, semitone motion was evident in several subsidiary lines.

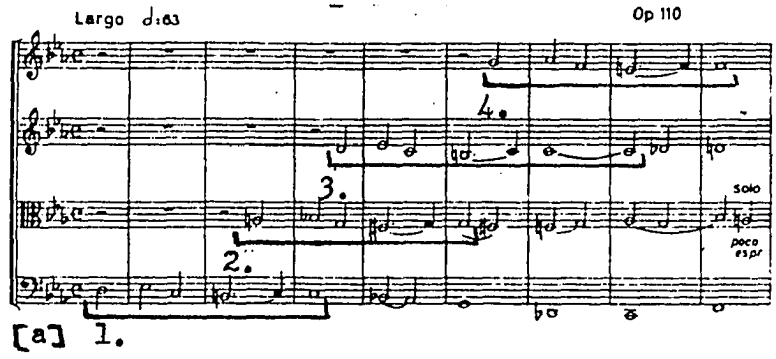
Movement five begins with slightly less evidence of the twelve tones during the fugue exposition than occurred during the fugato of movement one. A decided increase in chromatic influence was noted during the development and the coda as the twelve chromatic pitches were sounded in ever closer proximity. At measures 77-79 eleven of the twelve tones form vertical structures which accompany the final statement of motive [a].

In chapter four it was observed that six themes of the seventh quartet were characterized by recurrence of an opening motive either

immediate or in close proximity. This is also a prominent characteristic of thirteen of the eighteen themes of the eighth quartet. These themes and the techniques employed are shown in example 5:31.

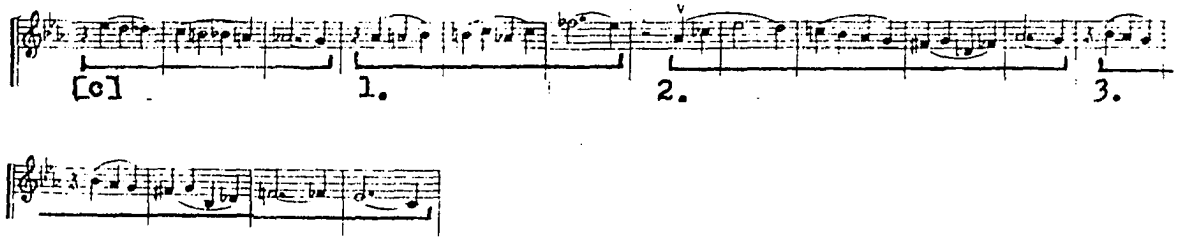
Ex. 5:31

Mvt. 1 (m. 1-8) - Theme A



The fugato of the opening measures of movement one causes an overlapping of four consecutive statements of motive [a].

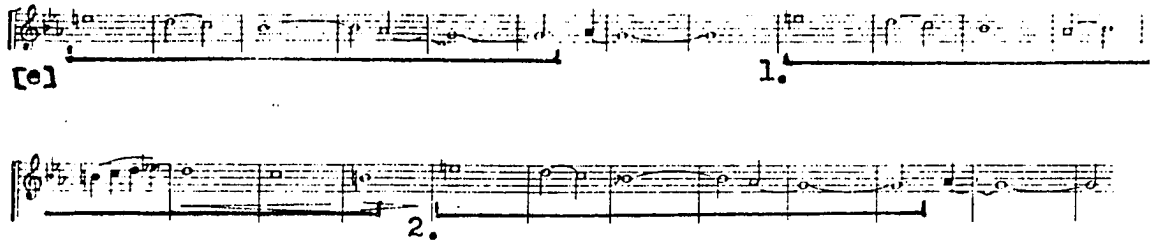
Mvt. 1 (m. 28-43) - Theme B



The first recurrence is heard as a modified retrograde of motive [c]. The second recurrence is varied chiefly by added pitches; although the descent is no longer chromatic the line is still a filling of the descending interval e^{b}-g and the integrity of e^{b}-c-a^{b}, and g is maintained by their placement. The third recurrence emerges from the techniques observed in the second recurrence. The directional movement and the ♩. ♩ rhythmic pattern of these recurrences are the primary means by which they are aurally associated with motive [c].

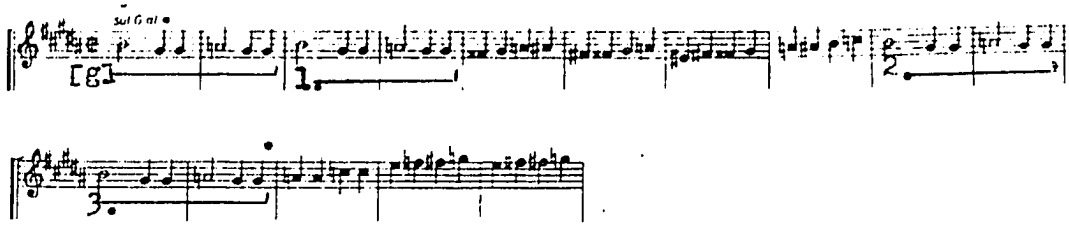
Ex. 5:31 continued

Mvt. 1 (m. 55-76) - Theme C



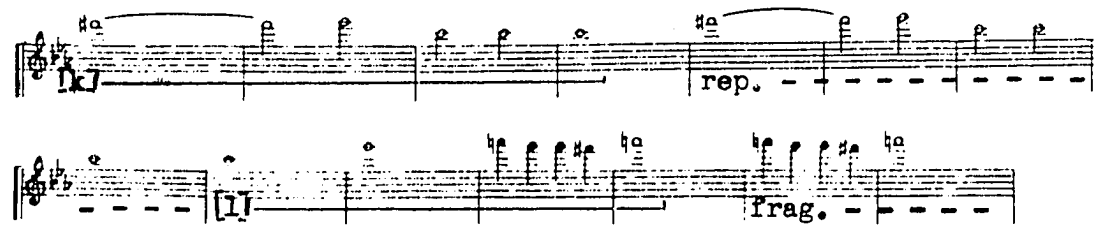
The first recurrence of motive [e] is varied by a change of direction at the end and an extension. The second recurrence is a replication of [e].

Mvt. 2 (m. 1-15) - Theme Ia



The first recurrence of motive [g] is a repeat; the second and third recurrences are a replication of the original statement and its repeat.

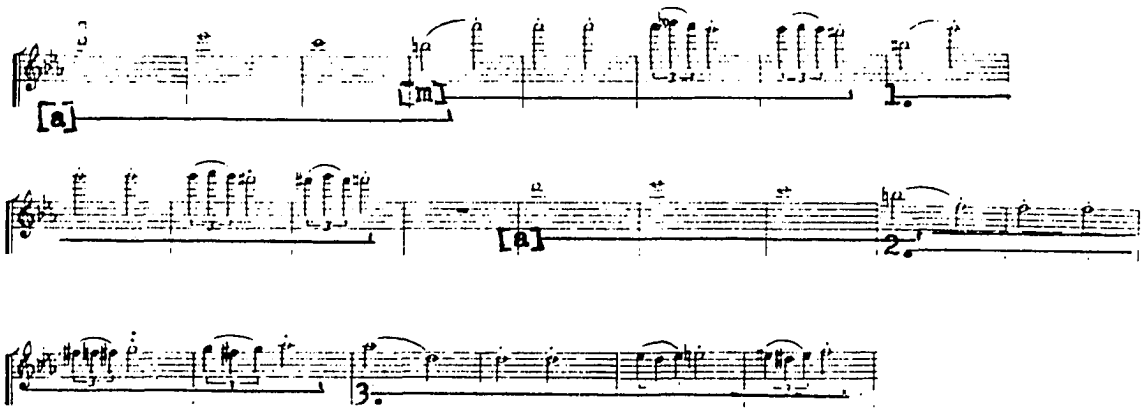
Mvt. 2 (m. 126-155 - Theme IIa



Theme IIa begins with two statements of motive [k].

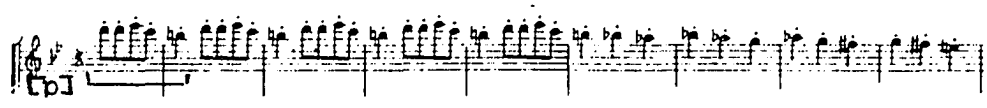
Ex. 5:31 continued

Mvt. 2 (m. 178-200) - Theme IIb



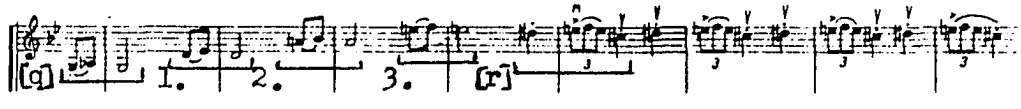
The first recurrence of motive [m] is a sequence, the second recurrence is a modified inversion, the third recurrence is a sequence of the second.

Mvt. 3 (m. 20-28) - Theme Ia



Theme Ia begins with fi statements of motive [p].

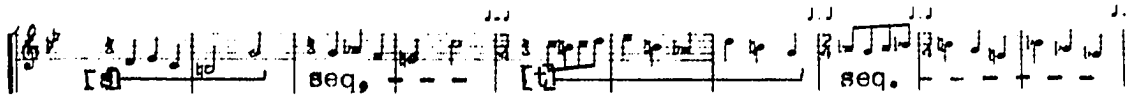
Mvt. 3 (m. 66-74) - Theme Ib



The first three recurrences of motive [q] are a sequence of the opening statement. This is balanced by four statements of motive [r].

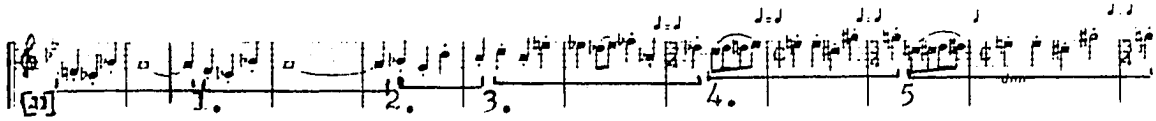
Ex. 5:31 continued

Mvt. 3 (m. 120-129) - Theme Ic



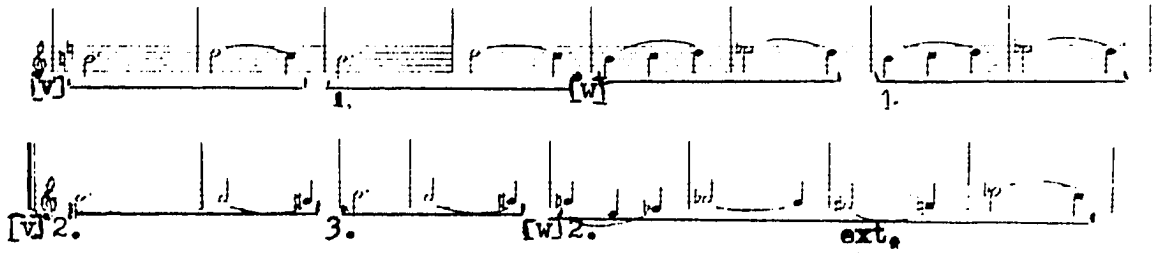
The recurrence of both motives [s] and [t] are a sequence of the original statement.

Mvt. 3 (m. 140-151) - Transition



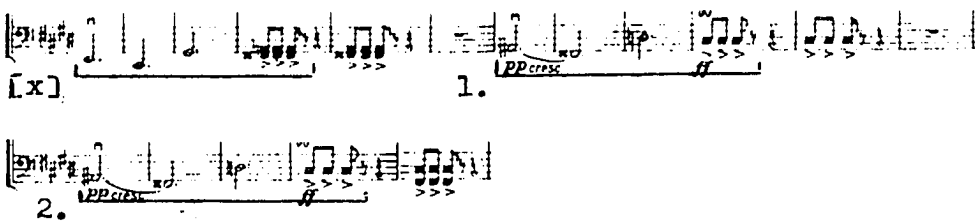
The first recurrence is a repeat of motive [u]; recurrences two through four are modified sequences while the fifth recurrence is a repeat of the fourth.

Mvt. 3 (m. 153-168) - Theme IIa



The first recurrence of motives [v] and [w] are repeats of their original statements. The second and third recurrences of [v] are varied by change of direction. The second recurrence of [w] is varied by change of direction and extension.

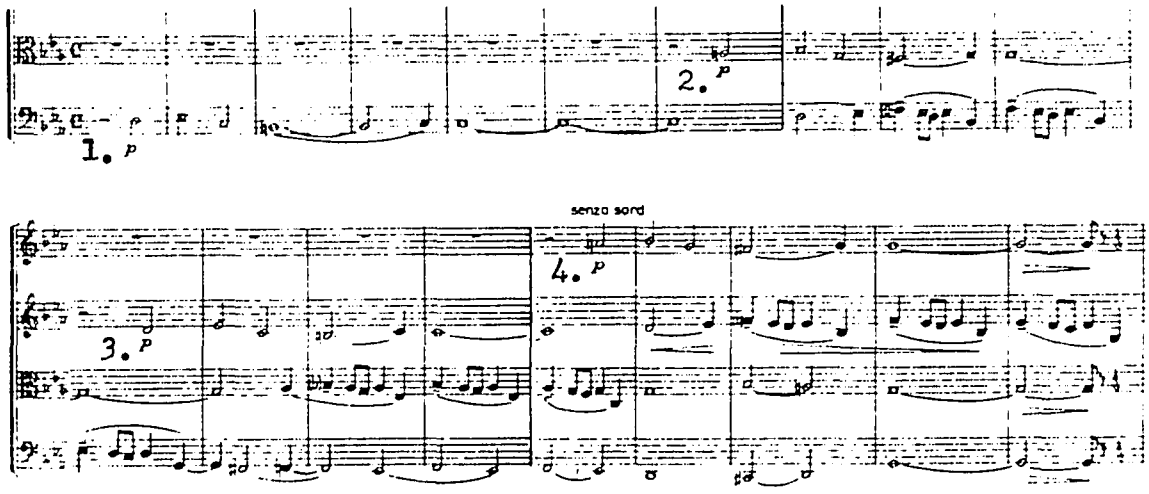
Mvt. 4 (m. 4-20) - Introduction



Ex. 5:31 continued

The first recurrence of motive [x] is a sequence of the original statement while the second recurrence is a repeat of the first.

Mvt. 5 (m. 1-19) - Fugue Exposition



As would be expected in a fugal texture, the exposition of movement five displays four successive statements of motive [a].

Eighteen of the twenty-five prominent motives of the eighth quartet are confined within the range of a perfect fifth or less. Of the seven remaining motives three have a range of a minor sixth and three cover a major sixth while [m] covers the range of a minor seventh. Sixteen of the twenty-five prominent motives feature movement which is either totally or basically conjunct, while two motives are basically disjunct and seven are evenly divided between steps and skips. None of the prominent motives are completely disjunct.

Unity of primary linear material is also served by instrumentation or timbre, for the violin sound has been selected for seventeen of the twenty-eight initial statements and recurrences of the prominent

themes. The cello has five initial statements and/or recurrences of prominent themes while the viola has two. The introduction and theme A of movement four are presented in octaves by the three lower instruments while the fugato texture of theme A of movement one and the fugue exposition of movement five use all four instruments.

With the exception of theme A of movement one and the fugue theme of movement five all of the themes of this quartet are initially stated with only the most minimal accompaniment. This contributes to an easy accessibility of the thematic materials. This accessibility facilitates recall of the linear material and assists the ear in recognition of the recurrences of motives and themes as they delineate the formal structure.

Mixed meter which was one of the most prominent characteristics of the seventh quartet is not significant in the eighth quartet. Only theme Ic of movement three mixes duple and triple meter.

Further investigation of the prominent motives to determine metric placement (accented versus unaccented) disclosed that sixteen begin on an accented beat; in all cases this is the first beat of the measure. The remaining nine motives begin with an anacrusis; seven of these motives are in the third movement where together with the triple meter they account for the waltz character of that movement.

With the exception of motive [e] all of the prominent motives are short. The six measure length of [e] plus its comparatively long temporal span caused by the largo tempo of movement one make [e] considerably longer than the other motives of this quartet.

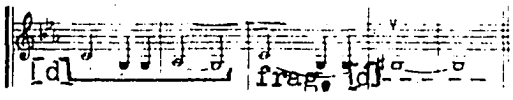
The Processes of Anticipation
and Emergence

Detailed investigation of the line score has revealed the overwhelming impact of the signature motive [a]. Example 5:29 has described the fifteen motives whose heredity was traced directly to the contour and/or implied alternating scale pattern of motive [a]. Of these motives, [a], [g], [k], [l], [p], [t], [s], [u], [v], [w], [x], and [y] dominate their respective thematic areas and movements by their many recurrences. Due to the large number of this family of motives, their similar contour, and their common scale basis it is impractical to discuss them as anticipations of one another. It has been observed that they are the primary source of linear unity at the highest architectonic level.

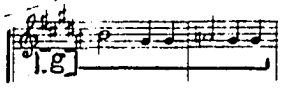
At the next highest architectonic level are those anticipations between adjacent movements. This quartet contains three notable examples as shown in example 5:32.

Ex. 5:32

Mvt. 1 (m. 122-126)



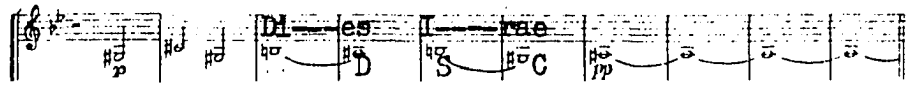
Mvt. 2 (m. 1-4)



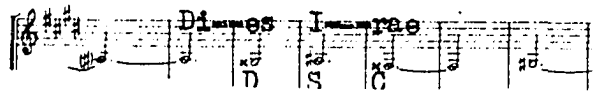
A recurrence of motive [d] as the final sound of movement one prepares for the first aural stimulus of movement two. Motive [g] is a transformation of [d]; while both the rhythm and the basic contour of motive [d] are retained, the toccata-like presentation of [g] as well as the new tempo and dynamics have completely altered its character.

Ex. 5:32 continued

Mvt. 3 (292-301)

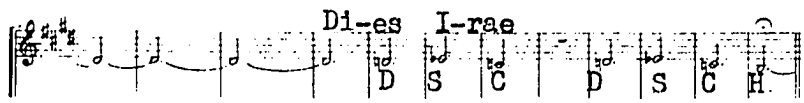


Mvt. 4 (m. 20-26)



In the closing measures of movement three the unaccompanied first violin states a fragment of the D-S-C-H contour which is preceded by a pitch which creates the tone pattern of the Dies Irae. The final a# of movement three is then sustained through measure 21 of movement four where the signature motive fragment recurs and the Dies Irae tone pattern is again prominent.

Mvt. 4 (m. 176-187)



Mvt. 5 (m. 1-7)

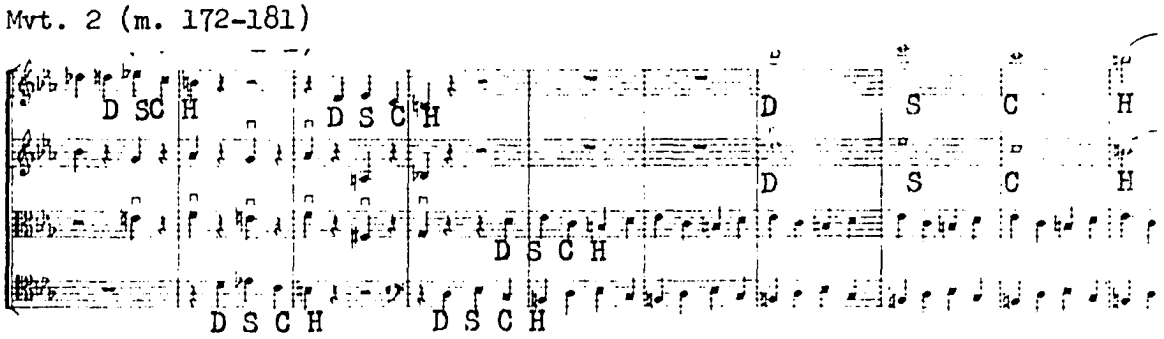
The same procedure shown just above recurs at the close of movement four. This is followed by the complete D-S-C-H contour which in turn anticipates the return of motive [a] at its original pitch frame as the first aural stimulus of movement five.

Perhaps of less importance to structural unity but of no less interest as stage setting devices are the anticipations shown in example 5:33. These anticipations foretell the appearance of motives

and themes in close proximity to their original statements or structurally important recurrences.

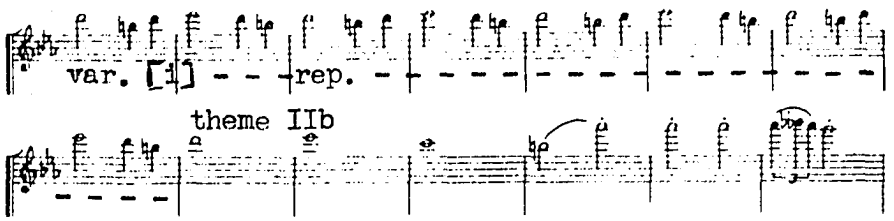
Ex. 5:33

Mvt. 2 (m. 172-181)



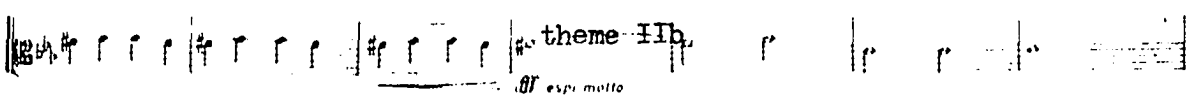
Diminution of the D-S-C-H motive in the first violin and cello at measures 172-174 anticipates the ostinato of the signature motive by the viola and cello (m. 175) which accompanies theme IIb. The initial sound of theme IIb (m. 178) is an augmentation of D-S-C-H.

Mvt. 2 (m. 289-302)



Repetition of a varied recurrence of motive [i] anticipates the pitches d, e^{b}, and b which are the first, second, and fourth pitches of a recurrence of theme IIb.

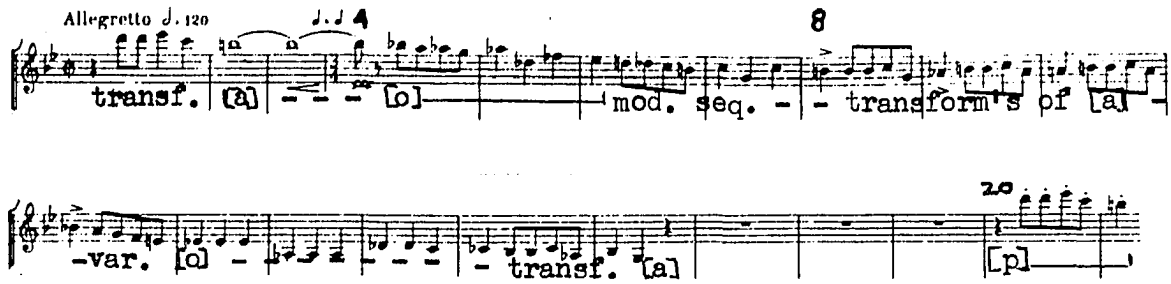
Mvt. 2 (m. 321-327)



At the close of a recurrence of theme IIb a technique similar to that shown just above prepares for a recurrence of theme IIa by anticipation of the f# and g.

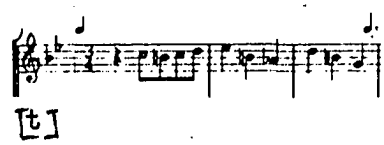
Ex. 5:33 continued

Mvt. 3 (m. 1-21)

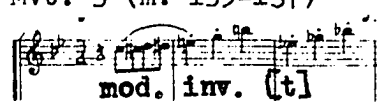


At measures 1-4 a transformation of the D-S-C-H motive anticipates the pitches of motive [p]; at measures 4-6 motive [o] anticipates the rhythm of [p]. At measures 8-16 the contour of the transformed [a] and the rhythm of [o] are manipulated to emerge at measures 15-16 in the interval pattern of [a] (the $\underline{b^b}$ of m. 16 is an added pitch): ascending minor second, descending minor third, and descending minor second. Motive [p] emerges at measure 20.

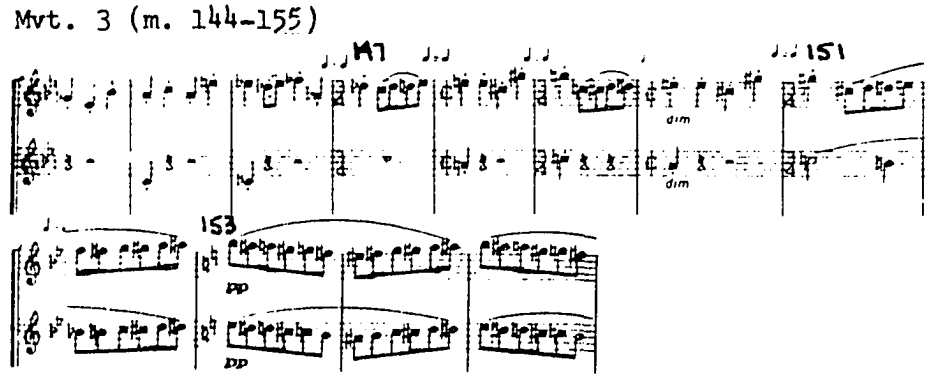
Mvt. 3 (m. 124-126)



Mvt. 3 (m. 135-137)



Mvt. 3 (m. 144-155)



Ex. 5:33 continued

The original statement of motive [t] (m. 124-126) displays no chromaticism. The anacrusis of the modified inversion of [t] (m. 135-136) moves in half-steps: c-c#-d-d#-e. This same chromatic anacrusis recurs at measures 147-148 and 149-150 and is extended at measures 151-152 by both the first and second violin. At measure 153 the first and second violin begin their chromatic accompaniment of theme IIb.

Non-Linear Relationships

A careful investigation of the score has revealed few apparent non-linear relationships. It is noted that except for the G# tonal center of thematic area I of movement two all of the prominent tonal centers are accommodated within an alternating scale constructed from the C tonal center of movements one and five.

PROMINENT TONAL CENTERS OF THE EIGHTH QUARTET

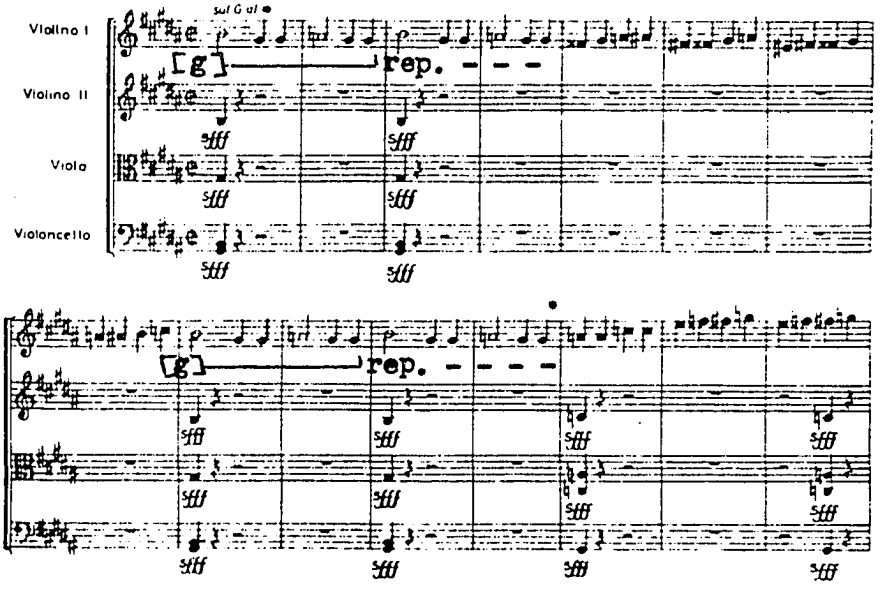
Movement 1:	A	B	C	B'	A'				
	C:	C:	C:	A:	C:				
Movement 2:	I	II	I'	II'					
	G#:	C:	G#:	C:					
Movement 3:	Ia	Ib	Ia'	Ic	II	Ia	Ib	Ia'	Ic
	G:	C:	G:	C:	E:	G:	C:	G:	C:
Movement 4:	A	B	C	Coda					
	C#:	C#:	F#:	C#:					
Movement 5:	Fugue								
	C:								

Except for the G# tonal center of thematic area I of movement two all prominent tonal centers are accommodated within an alternating scale constructed from the C tonal center of movements one and five: c-c#-(d#)-e-f#-g-a-(b♭).

The procedures in this quartet are primarily linear; thus there are few vertical structures. However, since the alternating scale as suggested by motive [a] is very prominent in this composition a search was made for evidence of the alternating scale among the vertical structures. This evidence is documented in example 5:34.

Ex. 5:34

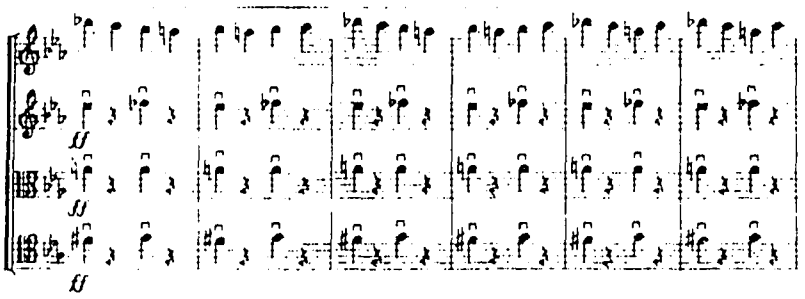
Mvt. 2 (m. 1-15)



Motive [g] has been identified as a member of the family of motives which trace their heredity to the D-S-C-H motive [a]. The implied alternating pattern of [g] (g#-a-b-(c)) is confirmed by the vertical structures: g#-b and g#-c-a.

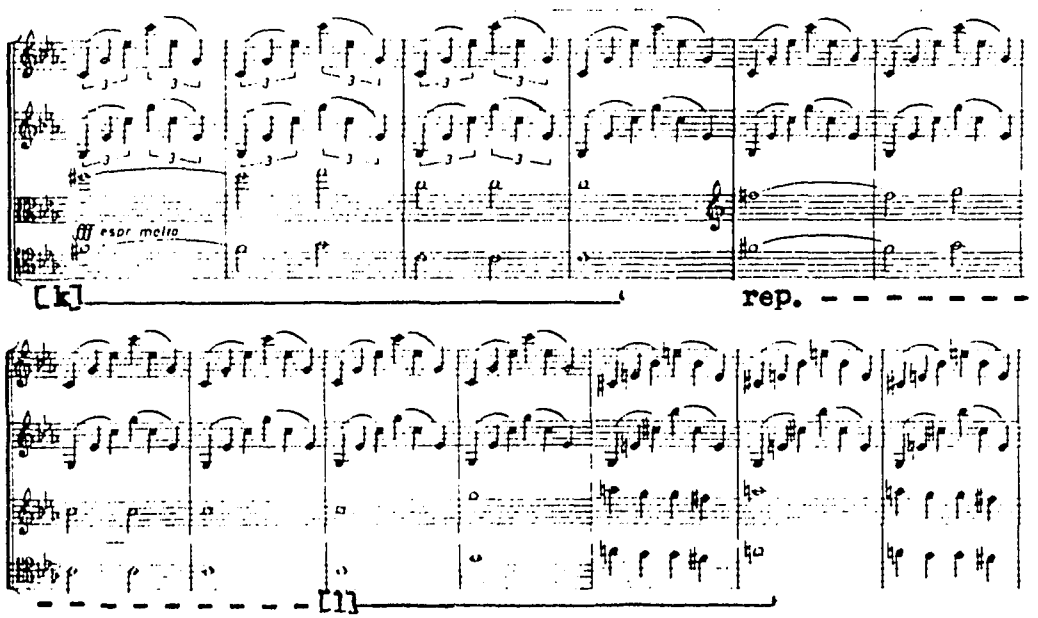
Ex. 5:34 continued

Mvt. 2 (m. 156-161)



The first violin contour articulates the pitches a-b^{b}-c-d^{b} while the vertical structures in the three lower instruments describe f#-a-e^{b} and g-a-f^{b}/e. Rearrangement of these pitches from the lowest pitch f# yields an alternating scale: f#-g-a-b^{b}-c-d^{b}-e^{b}-e/f^{b}.

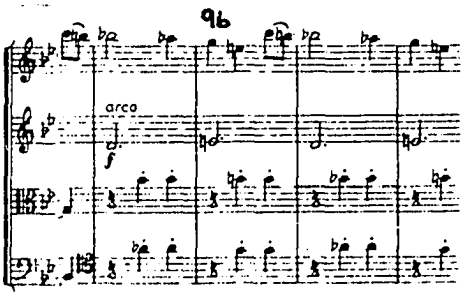
Mvt. 2 (m. 324-336)



Motive [k] and [l] are both accommodated within the alternating scale constructed from the C tonal center of this recurrence of theme IIa: c-c#-d#-e-f#-g-a-b^{b}. The arpeggiated vertical structures (c-e^{b}/d#-g and c#-e-g-b^{b}) in the first and second violin also subscribe to this scale.

Ex. 5:34 continued

Mvt. 3 (m. 95-98)

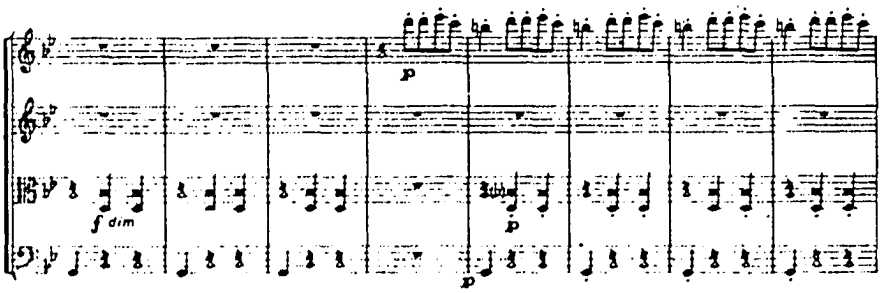


The vertical structures in the three lower voices are accommodated within the alternating scale constructed from an apparent E tonal center: e-f-g-a^{b}-b^{b}-b-c#-d. The c at measure 96 of the first violin does not belong to this scale but may be rationalized as an appoggiatura.

Attention has been called to the major/minor dichotomy which is a characteristic of the alternating scale. As shown in example 5:35 the dichotomy of G major versus G minor is a prominent feature of thematic area I of movement three.

Ex. 5:35

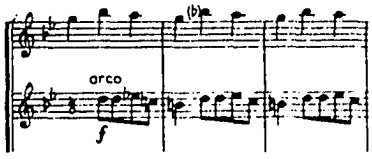
Mvt. 3 (m. 17-24)



The viola and cello reiterate a G minor chord while the first violin suggests G major.

Ex. 5:35 continued

Mvt. 3 (m. 79-81)



The first violin suggests a G minor chord while the second violin suggests a G major chord.

No instances were found in which the intervallic relationships within prominent motives acted as the intervallic basis for entrances of imitation or for the initial pitches of a sequence construction.

Chapter 6

STRING QUARTET NO. 9 IN E♭ MAJOR, OPUS 117

The ninth quartet was composed in the summer of 1964 and was dedicated to Irina Shostakovich the composer's second wife. The first performance was played on November 20, 1964 at the Moscow Conservatory by the Beethoven String Quartet. This same ensemble played the quartet's first Leningrad performance the following day in Glinka Hall. The ninth quartet (opus 117) and the tenth quartet (opus 118), both composed during the summer of 1964, are the composer's only quartets with consecutive opus numbers.

This quartet is the longest of the four compositions which were analysed for this study. The five movements of this quartet are performed without pause and they make considerable technical and emotional demands upon the performers. The first movement is a sonata-type design without development, thus justifying the designation of sonatina. Movement two is a ternary design, while movement three is an arch form. The fourth movement is a compound ternary scheme whose first thematic area is repeated. Movement five is a sonata-type structure whose development includes a fugue of larger proportions than the fugues observed in either the seventh or the eighth quartet. Unlike the codas which close quartets seven and eight, the coda of the

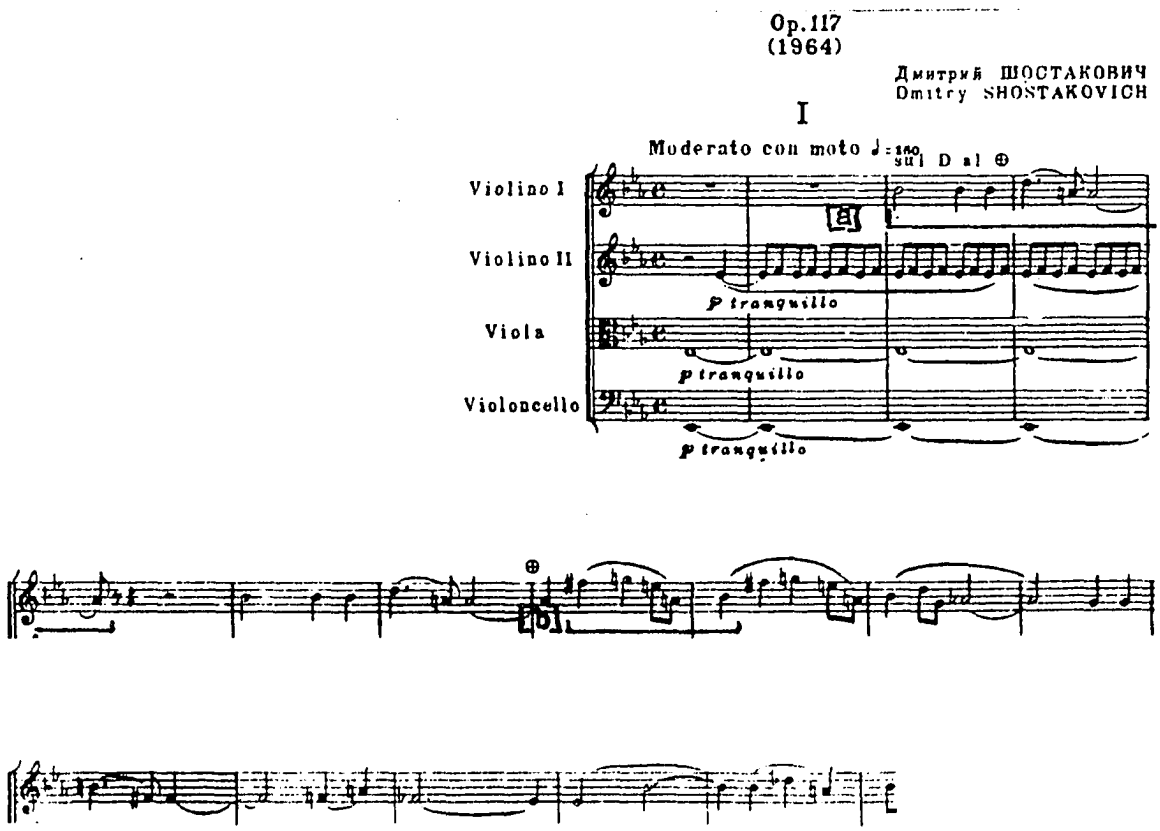
last movement of the ninth quartet does not reminisce through linear material from the first movement. Motives [h] and [i] are heard twice but there are no other references to motives of movement one.

The graphic analysis charts show recurrence of the several thematic areas as they outline the macro-structure of the various movements. These recurrences inevitably display variation, transformation, or permutation of the motives of the original thematic material.

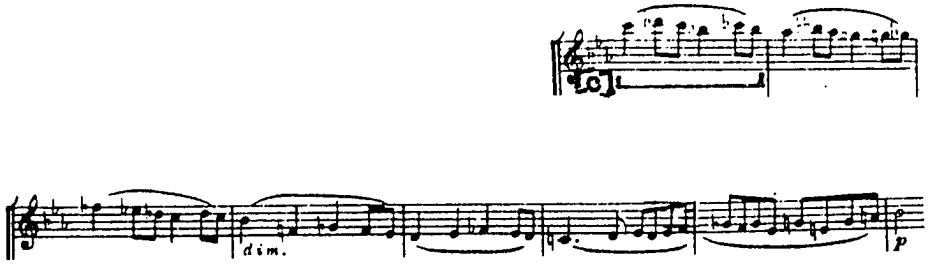
THEMATIC INDEX

THEME Ia

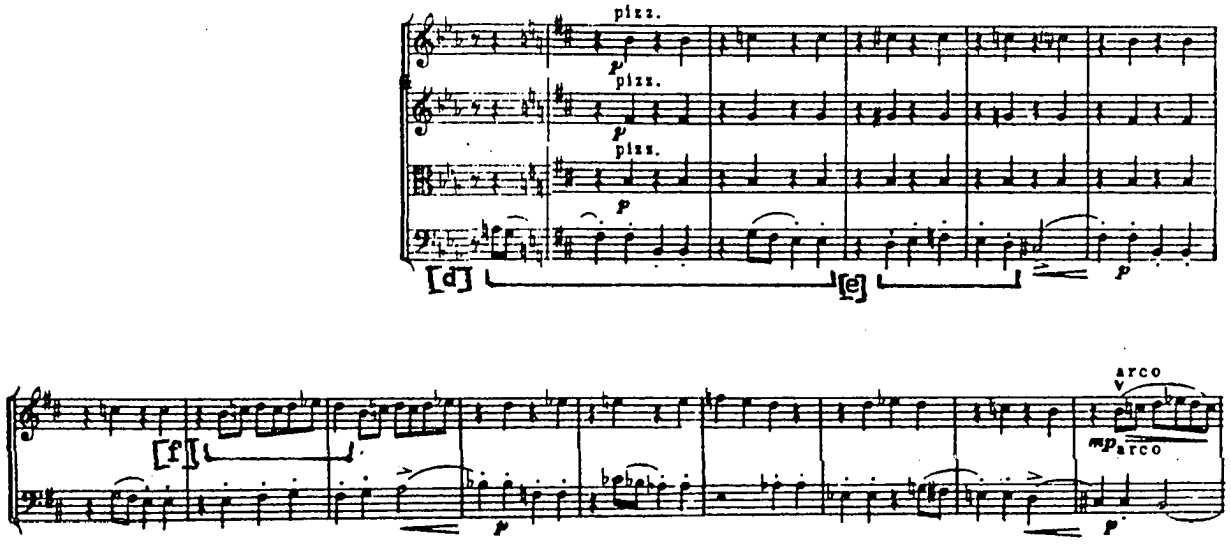
Ninth Quartet
Movement One



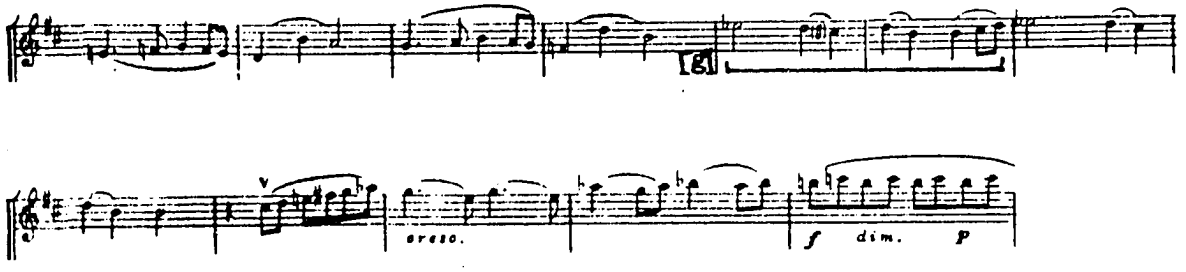
THEME Ib



THEME IIa



THEME IIb



GRAPHIC ANALYSIS OF FORMAL STRUCTURE

First Movement — Moderato con moto - E^b - Sonatina - 169 measures - $\frac{4}{4}$ meter.

Thematic Area I

A	B	A
1	27	34
E^b:	C:	E^b:

Thematic Area II

A	B
45	67
B:	

Retransition

[d] [i] [h]
78

Thematic Area I'

A
94
E^b:

Thematic Area II'

A
112
E^b:
F:

Thematic Area I'

B	A'	
138	142	
F:(ii)	E:(^bII)	B^b: (V)

Coda Section

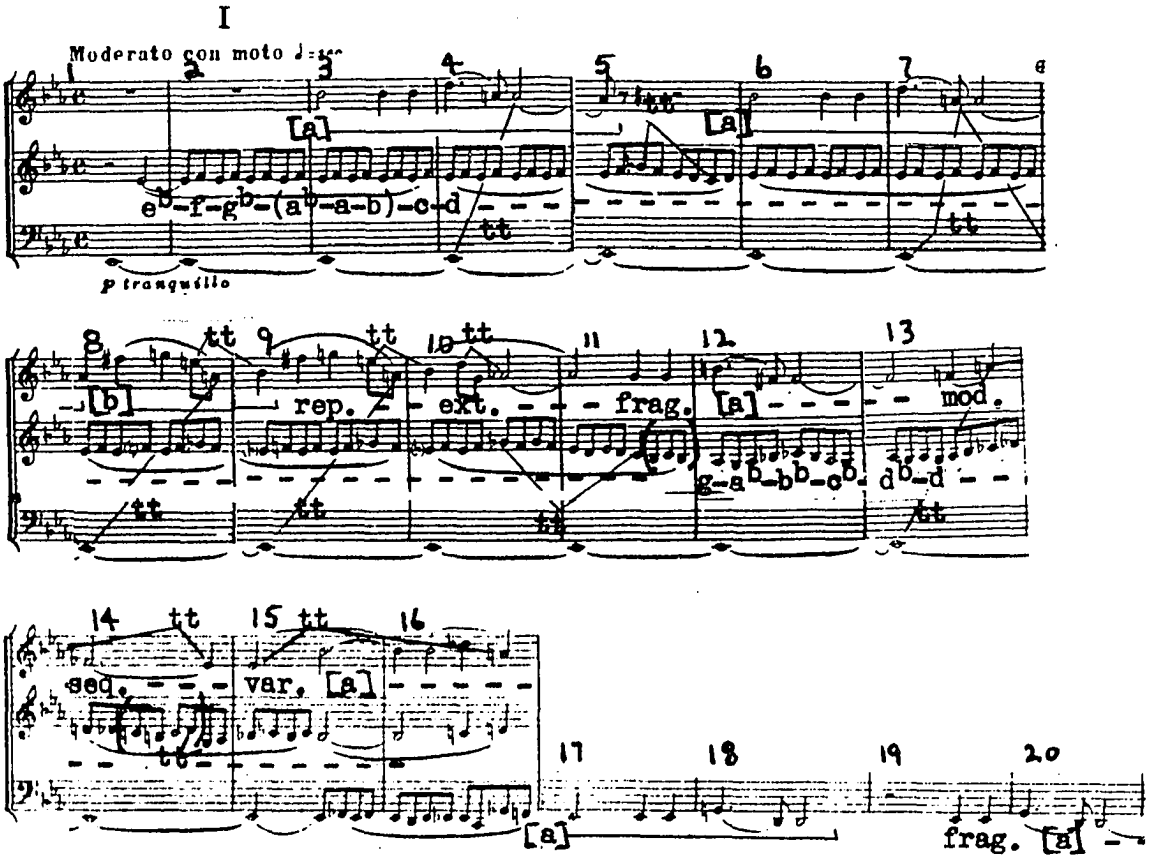
[h] [i] [a]
151
E^b:

transition to Movement Two

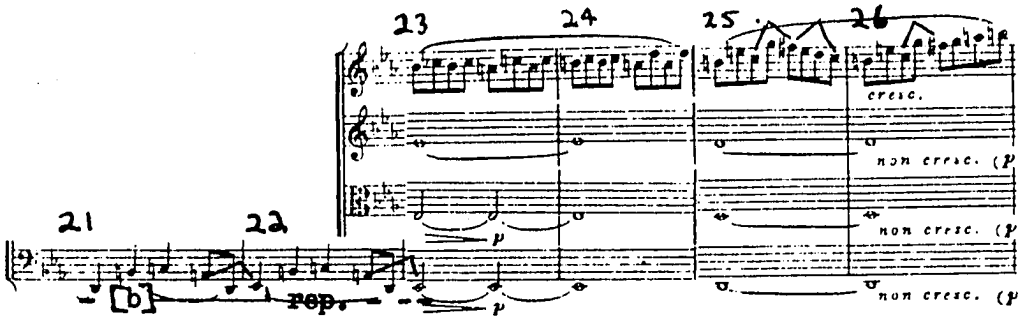
166

The initial measures of the ninth quartet present a quite different aural stimulus than either quartet seven or eight. The opening statement of the seventh quartet is a forthright and positive declaration; the aural impression of neatness and brevity created by this initial statement is confirmed by the remainder of the quartet which is only eleven minutes in length. The rise, fall, and inward turn of the contour of motive [a] of the eighth quartet immediately establish a mood of questioning introspection which is intensified by the successive entrances of [a] in fugato fashion; this mood of intense introspection is confirmed by the remainder of that quartet.

THEME Ia



THEME Ia continued



It has been noted that the ninth quartet is the longest of the quartets investigated for this study. In theme Ia several musical gestures are immediately apparent which contribute to an atmosphere of expansiveness, of timelessness, and of questioning: (1) e pedal tones provide tonal anchorage while a written-out trill creates motion without movement, (2) the pitch a of motive [a] undermines the authenticity of the E^b tonal center by suggesting a B^b tonal center, (3) this a together with the e^b pedal and the written-out trill forms a V^7/B^b thus casting further doubt upon the E^b tonal center, and (4) further instability is created by the tritone formed by the e^b pedal and the a of motive [a]. The detailed analysis will show that the tritone is one of the most prominent sounds of this quartet and that this e^b-a tritone is emphasized at a number of important structural positions.

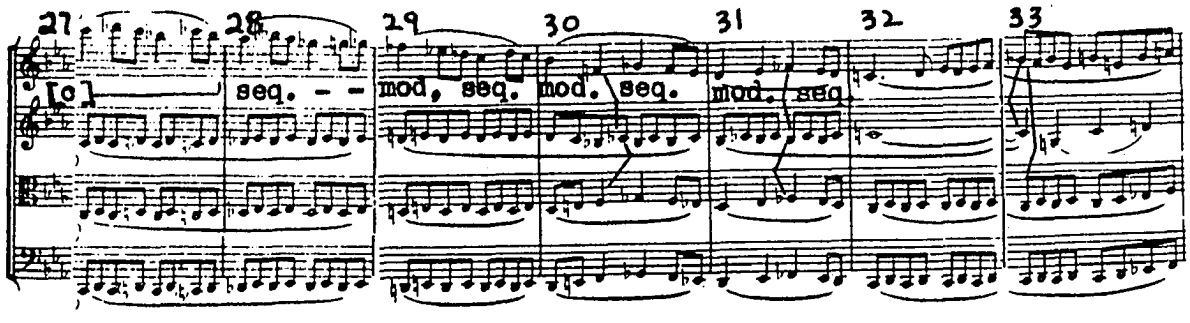
In addition to serving as a means toward establishment of a mood of broad expansiveness three of the aural events listed above make significant contributions to linear unity in this quartet: (1) the prominent pedal tones in the three lower instruments, (2) the e^b-a tritone which is first established at measure four, and (3) the several alternating scalar patterns found in the second violin. All three of

these events are shown on the line score.

The detailed investigation will disclose that the use of pedal tones is a prominent characteristic of at least one theme of each movement. The influence of the tritone, admittedly subtle at first, eventually spreads through all five movements and touches all themes of this quartet. The appearance of the alternating scale in this quartet is neither so immediate nor so obvious as that which was observed in quartets seven and eight. However, the ear educated by the prominent sounds of the two previous quartets is readily aware of the presence of the alternating scale pattern at measure five in the second violin. Although motive [b] is accommodated within an alternating scale constructed from the E^{b} tonal center of theme Ia i.e., e^{b}-e-f#-g-a-b^{b}-(c-d^{b}), recognition of the alternating pattern is not aurally prominent; alternating pattern influence is not evident in motive [a].

Measures 23-26 act as brief transition to theme Ib at measures 27-33. As this analysis continues attention will be called both to the contour and to the texture of these measures for it will become apparent that they are anticipating important thematic areas of movements two and four.

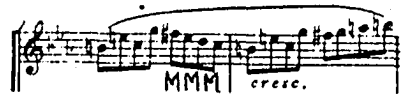
THEME Ib



Theme Ib achieves a short departure from theme Ia principally by a change of texture and by an abandonment of pedal tones in favor of a concentration upon stepwise eighth note motion in all voices. This stepwise motion continues the preoccupation with minor and major seconds which was begun by the second violin line which accompanied theme Ia. Although motive [c] has a chromatic scale basis example 6:1 shows that prominence is given to a pattern of descending major seconds; this latter sound was anticipated in the transition at measure 25.

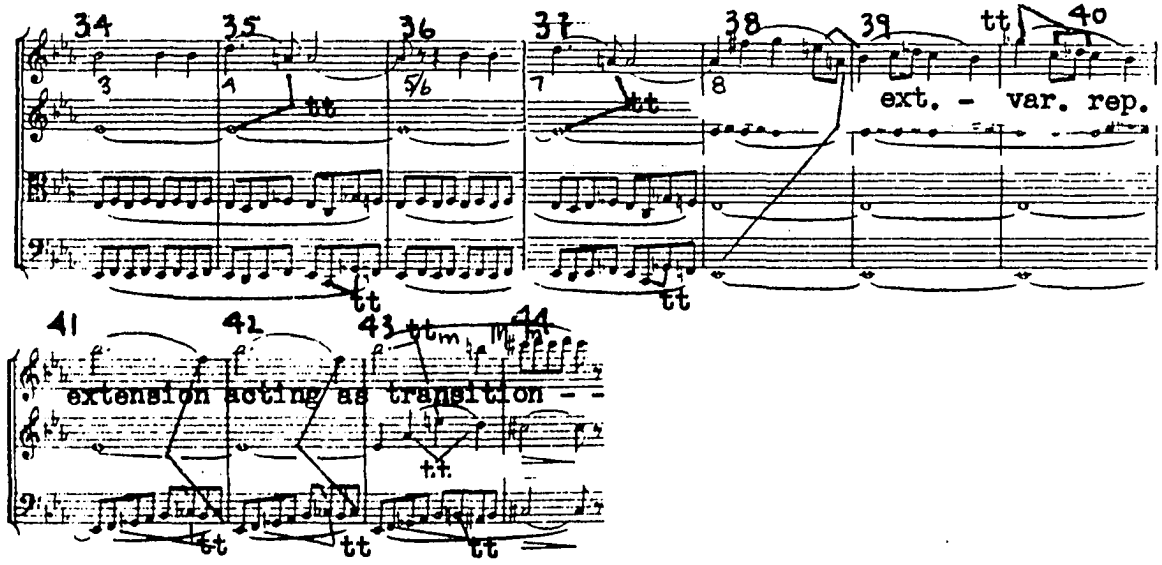
Ex. 6:1

Mvt. 1 (m. 25-26)



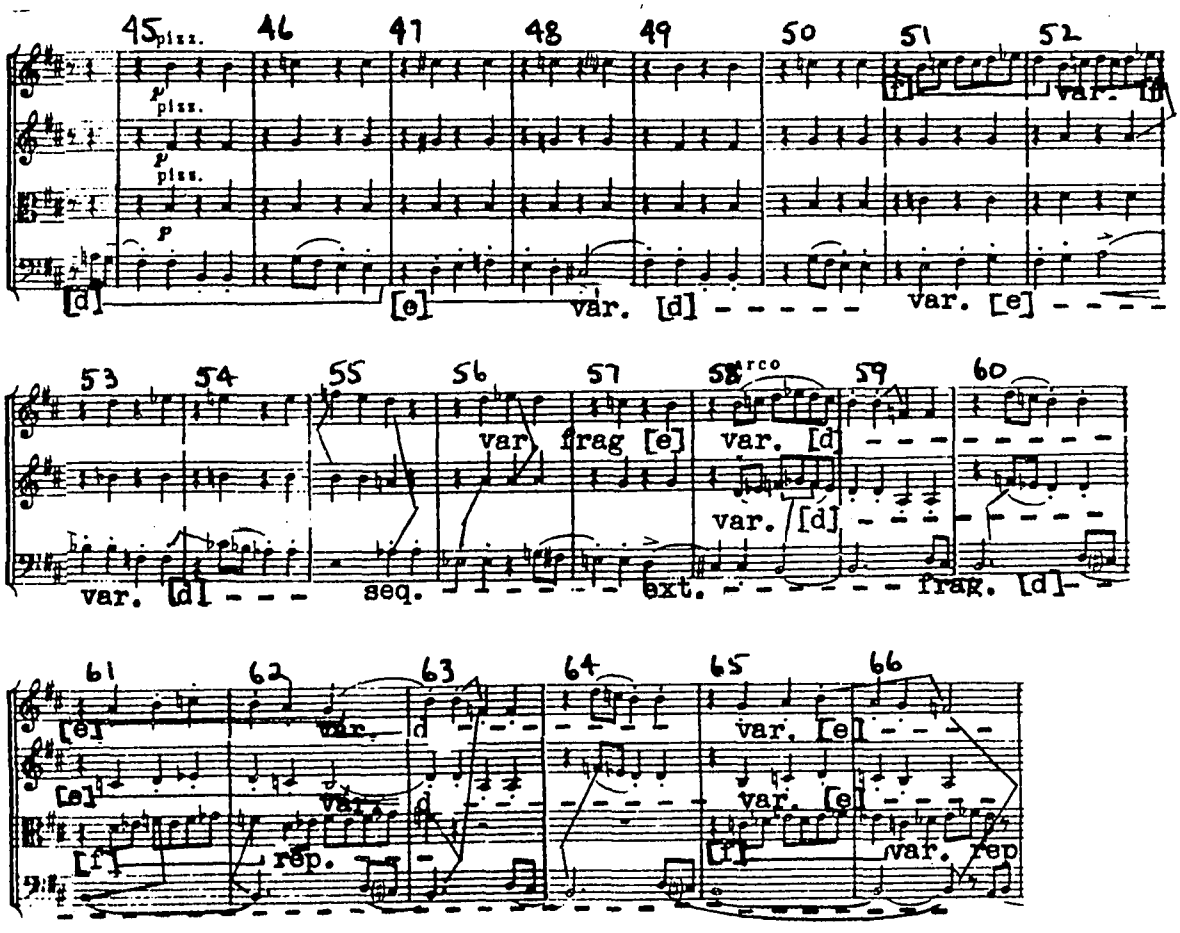
Mvt. 1 (m. 27-29)

THEME Ia'



Although this recurrence of theme Ia is very much abbreviated all of the characteristic sounds are present: motives [a] and [b], the e^{b}-a tritone, pedal tones, and the written-out trill. The original measure numbers of recurring lines are shown on the line score. Measures 41-44 act as a brief transition to theme IIa.

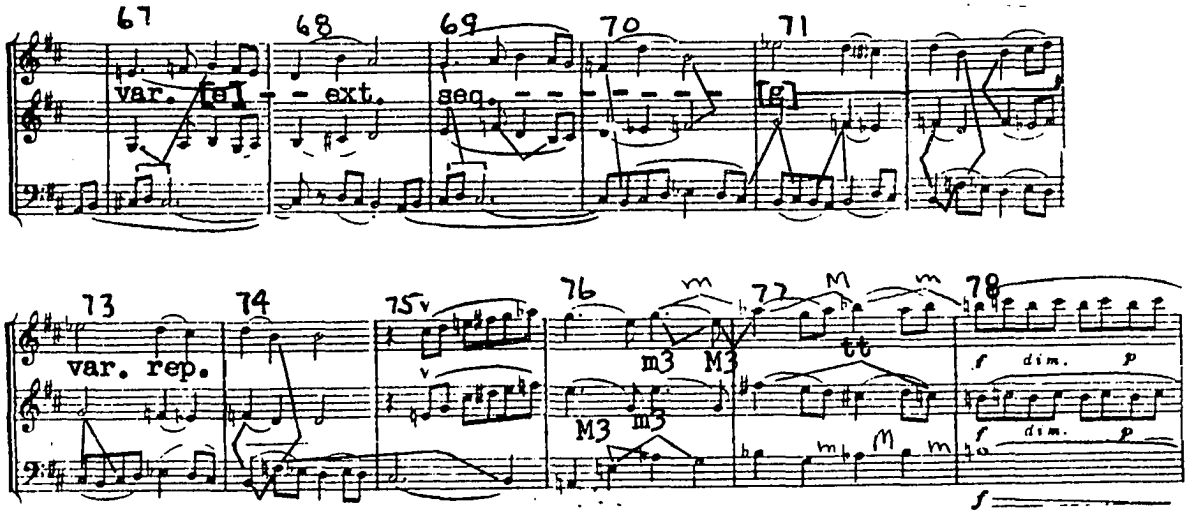
THEME IIa



The overwhelming aural impression of theme IIa is stepwise motion, a subtle manipulation of major versus minor seconds; the only prominent skip is the descending perfect fifth of motive [d]. While the

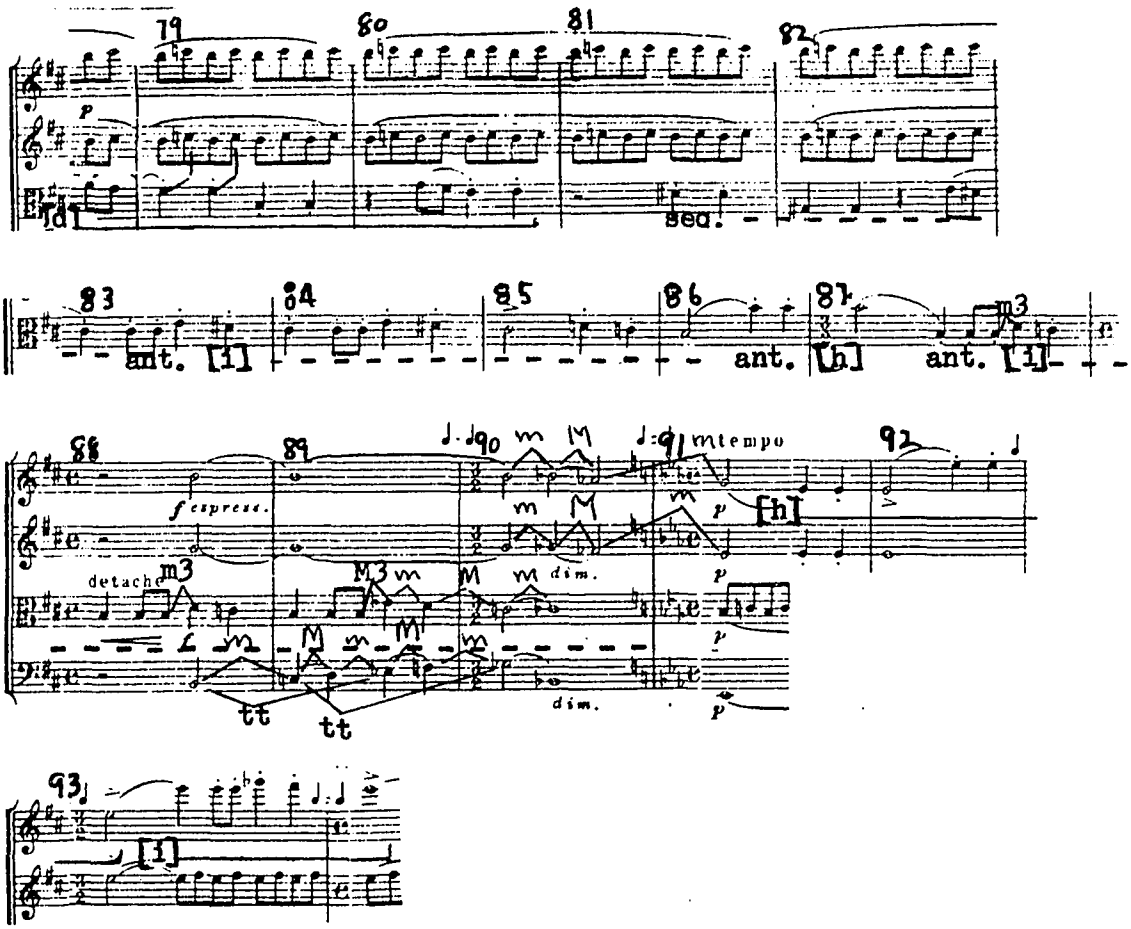
tritone is not particularly prominent in theme IIa the alternating scale is more prominent. The emergence of the alternating pattern at this point was anticipated by the first violin at measures 43-44. Motives [e] and [f] are the first prominent motives of this quartet in which the alternating pattern is aurally obvious. These two motives are so similar that they might be considered variations of the same contour; they are identified as seperate entities mainly to facilitate discussion. At measures 65-66 in the first violin a varied recurrence of [e] is touched by the whole tone pattern of theme Ib (m.27).

THEME IIb



Measures 67-74 of theme IIb lay aside the alternating pattern in favor of renewed emphasis upon the tritone (b-f and c#-g). At the close of theme IIb an alternating pattern once again becomes prominent in the first violin and cello. Also prominent is an interplay of minor versus major thirds, a characteristic of the alternating scale.

RETRANSITION

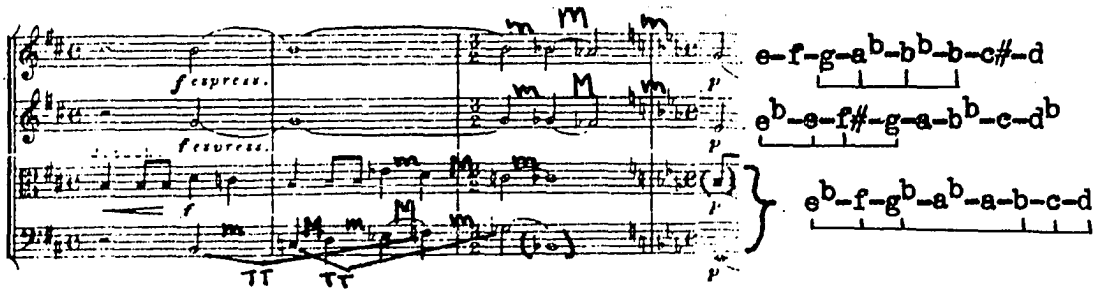


As shown on the line score this retransition begins with a vertical combination of the written-out trill of theme Ia and motive [d] of theme IIa. The several anticipations of motive [i] in the viola at measures 87-90 emphasize the minor third versus a major third.

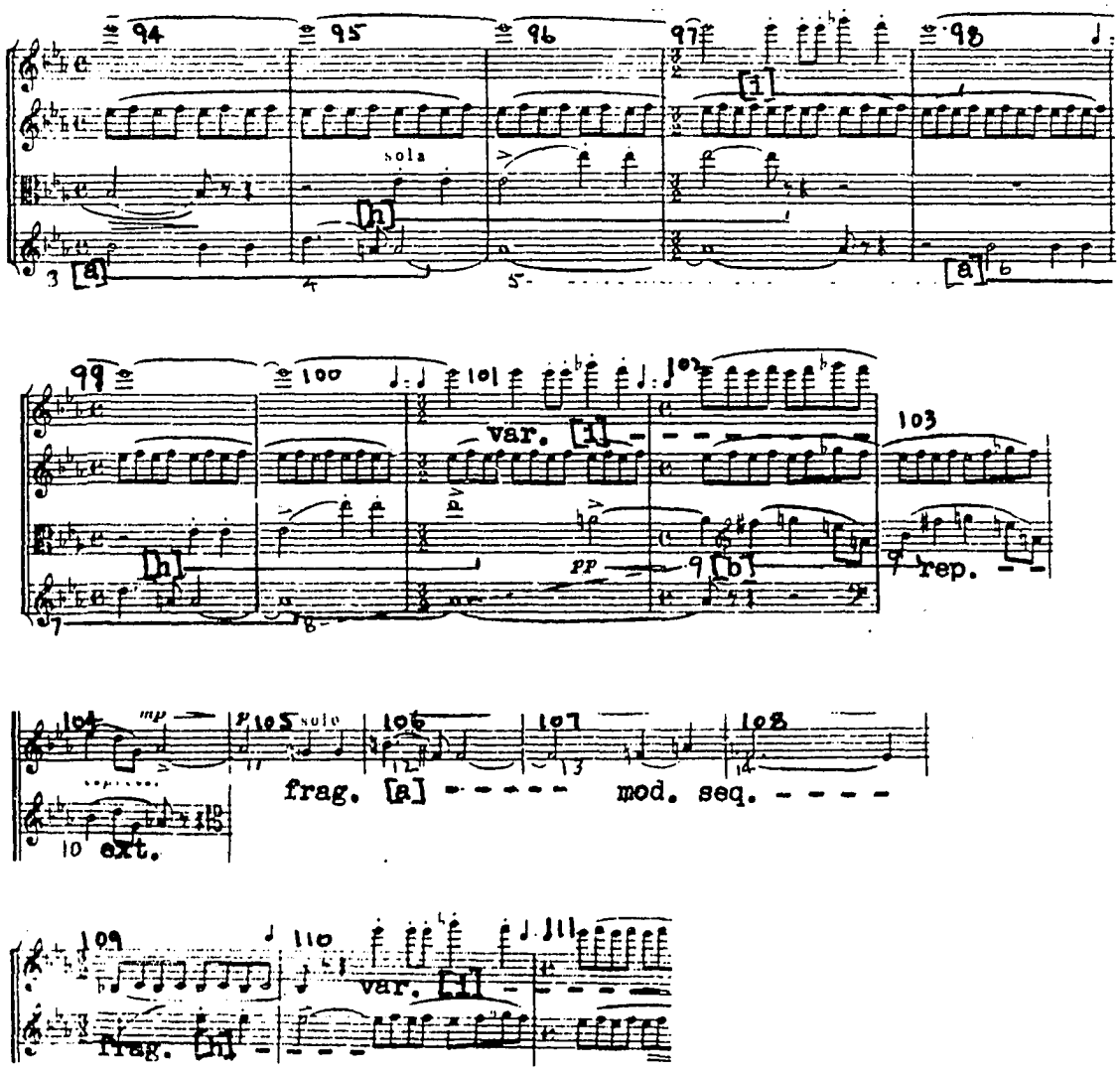
All voices at measures 88-91 emphasize the alternating scale. Example 6:2 shows the three possible alternating scale patterns as they occur among the four voices. The tritone is doubly asserted by the cello; the tritone is a characteristic of the alternating scale.

Ex. 6:2

Mvt. 1 (m. 88-91)

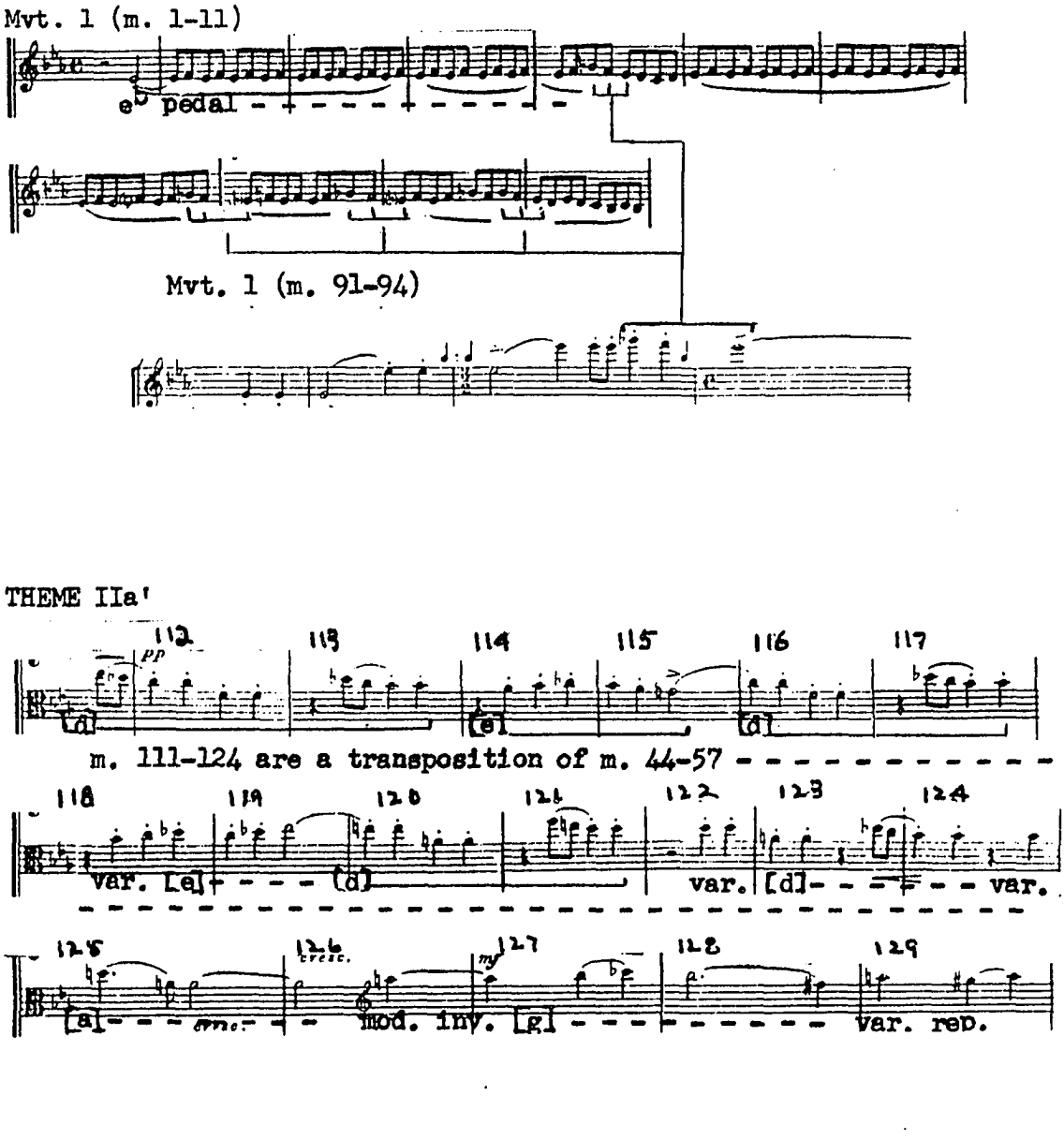


THEME Ia'

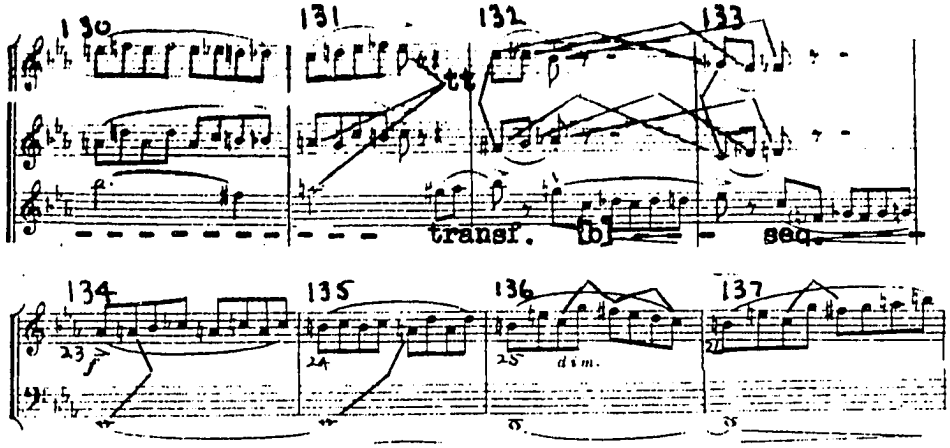


As shown on the line score this recurrence of theme Ia is basically measures 3-14 of the original statement with the addition of motives [h] and [i]. As shown in the example 6:3 the genesis of the combined contours of [h] and [i] lies in the undulating eighth notes of the second violin at measures 1-11.

Ex. 6:3

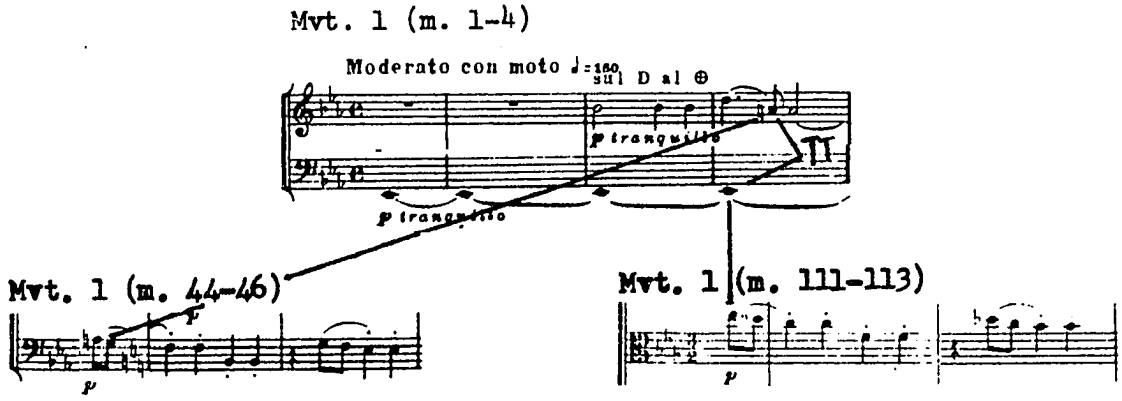


THEME IIa' continued



As shown in example 6:4 the interval of transposition between this recurrence of theme IIa and the original statement is the prominent e^{b}-a tritone cited in the opening measures of this movement.

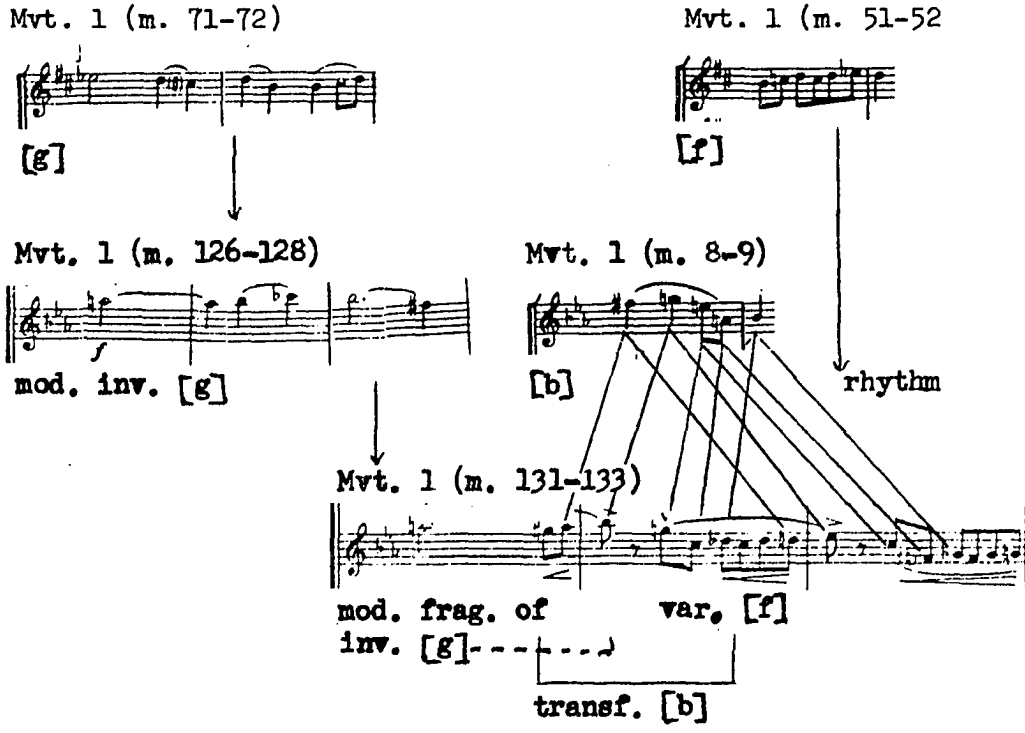
Ex 6:4



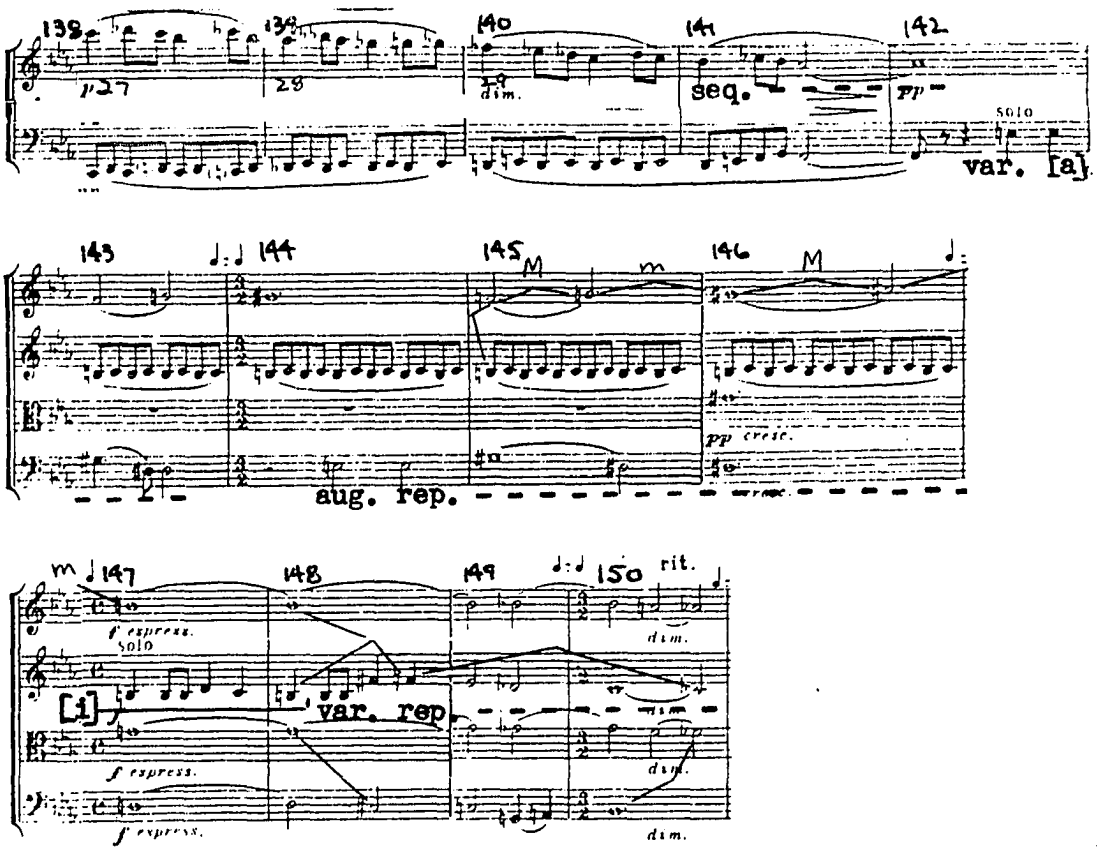
As shown on the line score this recurrence closes with a very prominent tritone emphasis in the first and second violin at measures 132-133. These prominent tritones are preparing for a recurrence of measures 23-26 whose prominent tritones e^{b}-a and c-f# are shown on the line score. As before, these measures serve as a brief transition to theme Ib.

Although motive [g] was a prominent sound of theme IIb the modified inversion of [g] and its varied repetition at measures 126-131 do not impress the ear as a recurrence of theme IIb. As shown in example 6:5 a varied fragment of this variant [g] is used at measures 131-132 in horizontal combination with a varied recurrence of motive [f] thereby forming a subtle transformation of motive [b].

Ex. 6:5



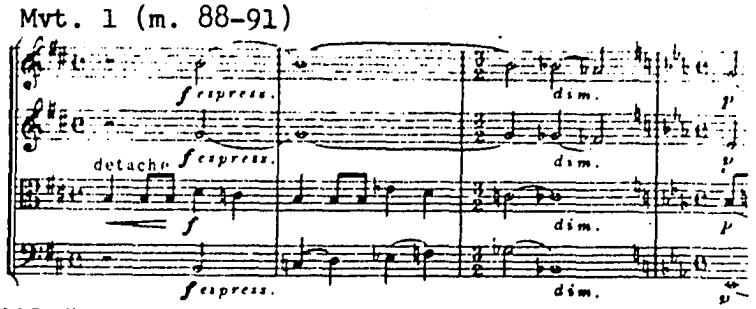
THEME Ib' THEME Ia''



The original measure numbers of prominent linear material of themes Ib and Ia are shown on the line score as are the tritones at measures 145-150. As shown in example 6:6 the cadence preparation at measures 147-150 is a varied recurrence of the cadence preparation at measures 88-90.

Ex. 6:6

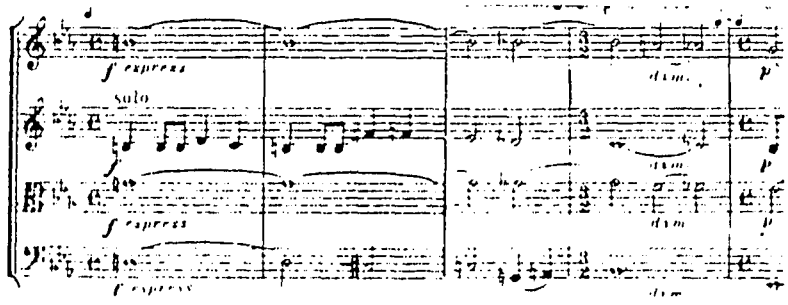
Mvt. 1 (m. 88-91)



All twelve tones used except a and c#.

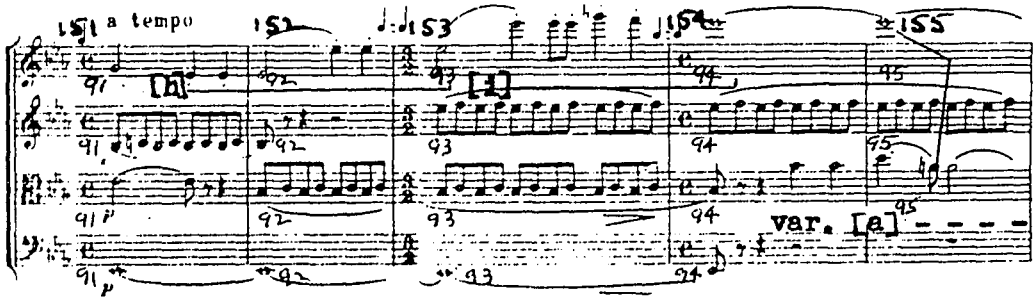
Ex. 6:6 continued

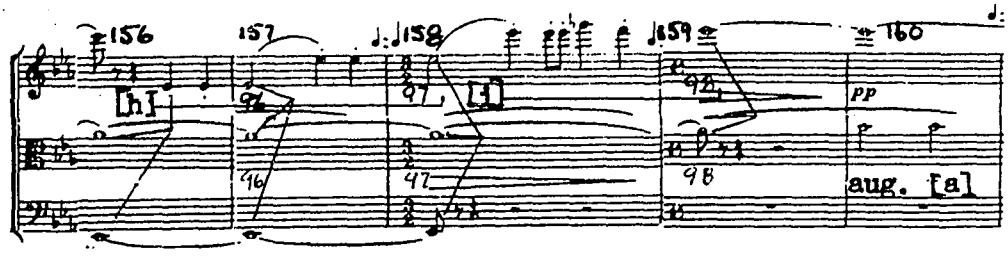
Mvt. 1 (m. 147-151)

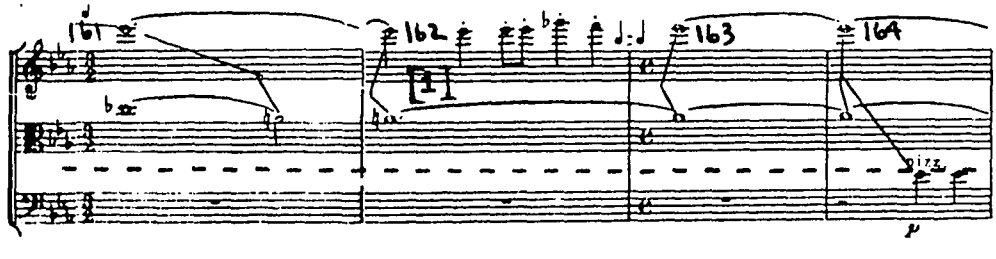


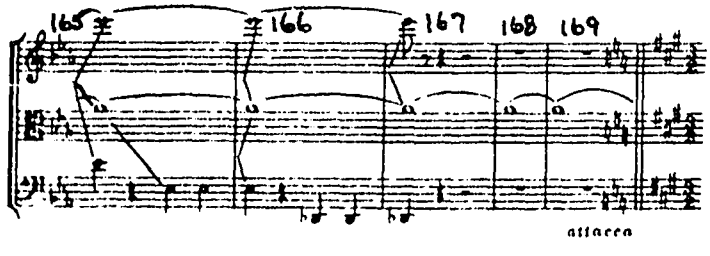
All twelve tones of the chromatic scale are used.

CODA









Recurrence of prominent linear material is shown on the line score. Of particular interest here is the ever-present e^{b}-a tritone at measures 155-167; this tritone was noted as an important aural event at the beginning of this movement. At measures 165-168 the cello $\underline{d^{b}}$(c#) and the viola $\underline{a}$ are observed in retrospect to anticipate two members of the initial f# minor triad of movement two.

Summary

Attention was called to the quite different sound of the initial measures of this quartet as compared to quartets seven and eight. Pedal tones, a challenge to the authenticity of the E^{b} tonal center, and prominent tritones combine to create an atmosphere of broad expansiveness and questioning.

Three prominent aural events were observed in theme Ia: (1) a generous use of pedal tones, (2) conspicuous tritones (especially e^{b}-a), and (3) several alternating scalar patterns. Two forms of the pedal tone are presented simultaneously in the opening measures of theme Ia: the sustained $\underline{e^{b}}$ in the viola and cello (m. 1-15) and the intermittent written-out trill in the second violin (m. 2-11). In theme Ib the sustained pedal yields in favor of the written-out trill. Although pedal tones are less prominent in theme IIa a repeated $\underline{b}$ is featured in the viola at measures 45-50 and in the cello at measures 58-66. The written-out trill is prominent in the retransition in the first and second violin at measures 78-85, and in the viola at measures 91-94. The cello at measures 91-93 has a sustained pedal while the

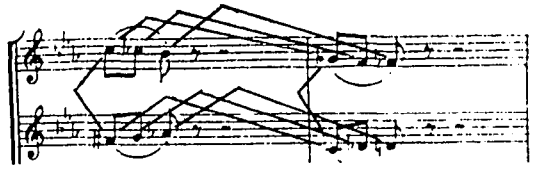
second violin at measure 93 begins a written-out trill which continues into measure 103. Motives [h] and [i] which are stated for the first time at measures 91-94 are basically an $\underline{e^{b}}$ pedal; the origin of these motives in the written-out trill of the second violin at measures 1-11 is shown in example 6:3. Both the written-out trill and the sustained pedal continue to be prominent in the recapitulation of themes Ia, Ib, and IIa as well as in the coda. An a sustained pedal serves as transition to movement two.

The second prominent aural event of theme Ia is the conspicuous use of the tritone which is especially prominent as e^{b}-a and which was first observed at measure four. The e^{b}-a tritone which is purely vertical at measures 4-10 is given linear emphasis in the first violin at measures 13-16. Although the short transition (m. 23-26) to theme Ib contains the tritones e^{b}-a and c-f#, theme Ib contains no conspicuous tritone influence. This absence of the tritone, a change in texture, and the descending whole tone pattern observed in example 6:1 are the primary means through which a separate aural character is established for theme Ib. The prominent e^{b}-a tritone returns for a varied recurrence of theme Ia at measure 34. Although the tritone is not prominent in theme IIa, the line score on page 197 shows the prominent c#-g and b-f tritones of IIb. The e^{b}-a tritone returns to prominence at measure 95 for the varied recapitulation of theme Ia and for the transition at measure 134. The prominent tritones of measures 145-150 are shown on the line score on page 202. The line score of the coda on page 203 shows that the e^{b}-a tritone is one of the most prominent sounds of the closing measures of movement one.

Example 6:7 shows the influence of the tritone on a sequence construction in the first and second violin at measures 132-133.

Ex. 6:7

Mvt. 1 (m. 132-133)



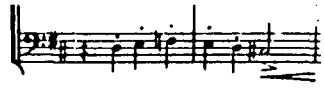
The third prominent aural event of theme Ia is the occurrence of several alternating scalar patterns as shown on the line score on page 191. The ear educated by the prominent sounds of quartets seven and eight is readily aware of the presence of the alternating scalar pattern at measure five in the second violin. As shown in the example 6:8 motives [e], [f], and [i] articulate aurally prominent alternating scalar patterns while [b] is accommodated within an alternating pattern constructed from the E^b tonal center of thematic area I.

Ex. 6:8

Mvt. 1 (m. 8-9)

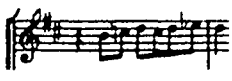
[b] (e^b)-e-f#-g-a-b^b

Mvt. 1 (m. 47-48)



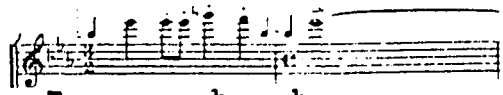
[e] c#-d-e-f

Mvt. 1 (m. 51-52



[f] b-c-d-e^b

Mvt. 1 (m. 93-94)



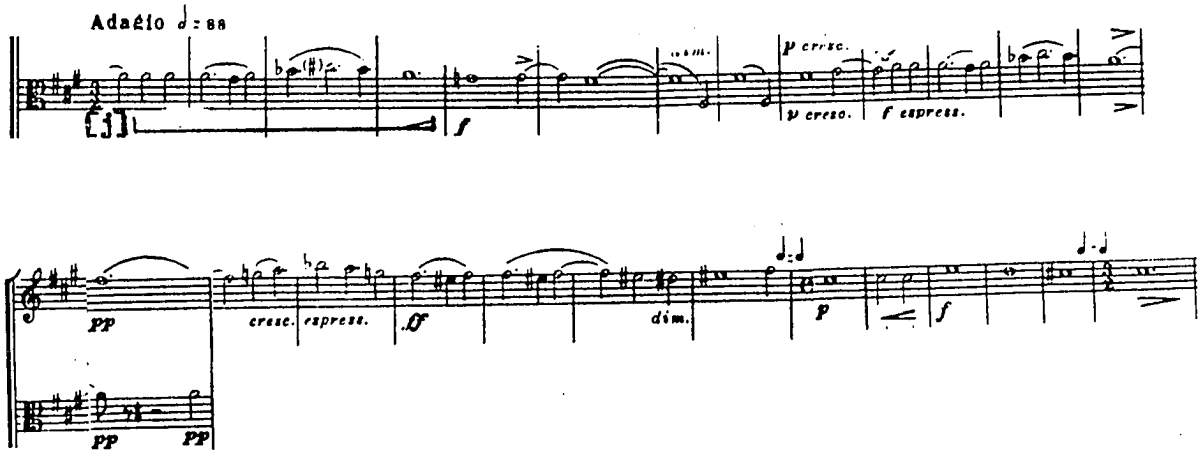
[i] (d)-e^b-f-g^b

The alternating pattern is aurally more prominent in theme IIa than in any other theme due to the fact that motives [e] and [f] are the most frequently stated sounds of that theme. The influence of the alternating pattern may also be observed on the line score of theme Ib (p. 193), theme IIb (p. 196), the retransition (p. 197), and theme Ia' (p. 198). While alternating patterns are observed in the linear material of this movement they are not nearly so prominent as was the case in quartets seven and eight.

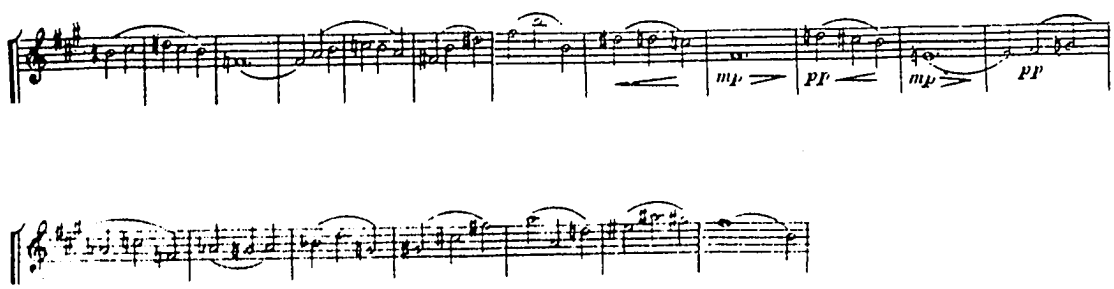
THEMATIC INDEX

THEME A

Ninth Quartet
Movement Two



THEME B



GRAPHIC ANALYSIS OF FORMAL STRUCTURE

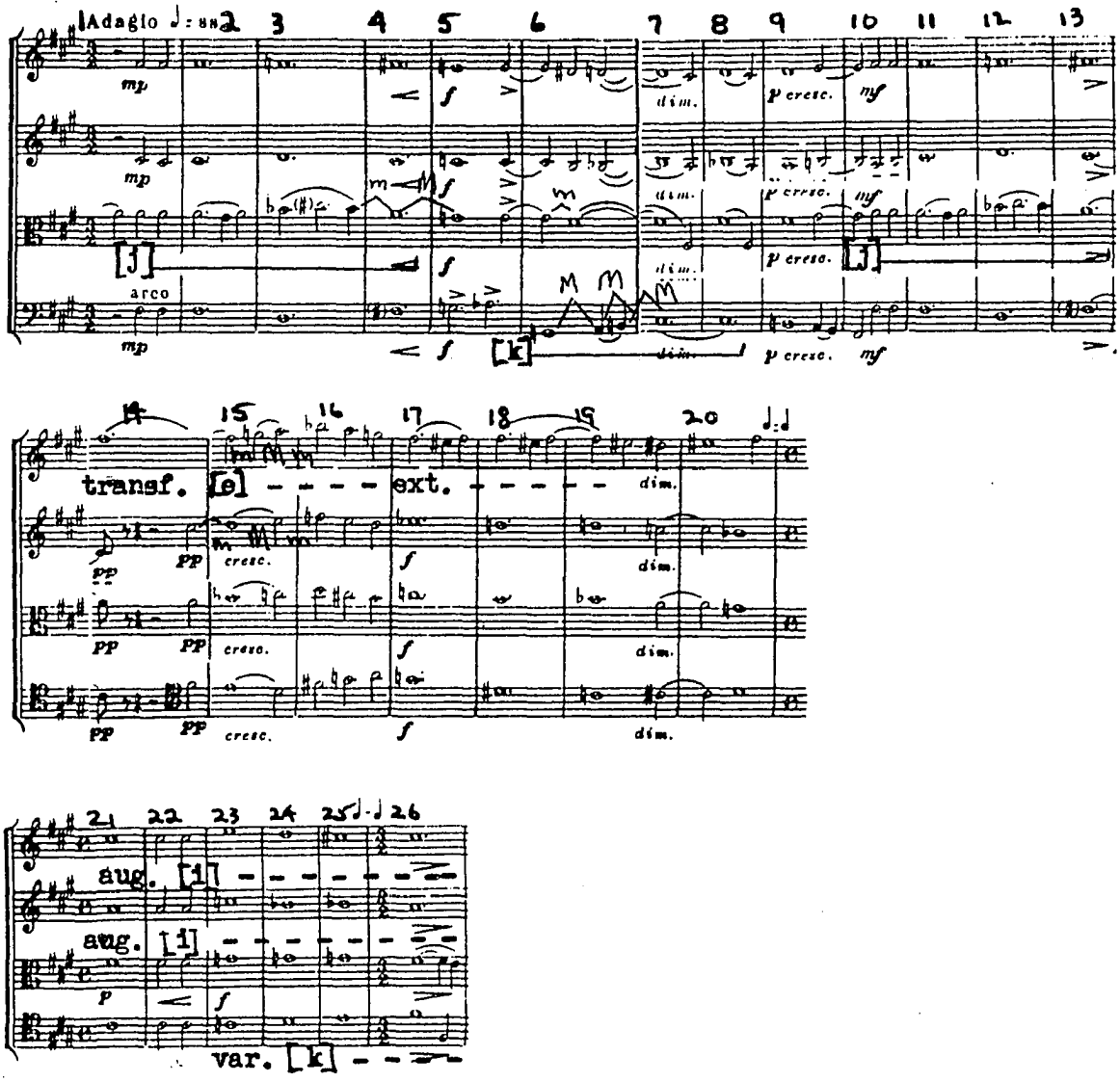
Second Movement — Adagio - F# - Ternary - 88 measures - $\frac{3}{2}$ meter.

Theme A	transition
1	[j]
F#:	27

Theme B	retransition
41	[e]
B:	60

Theme A'	transition to Movement Three
68	[1]
F#:	76

THEME A

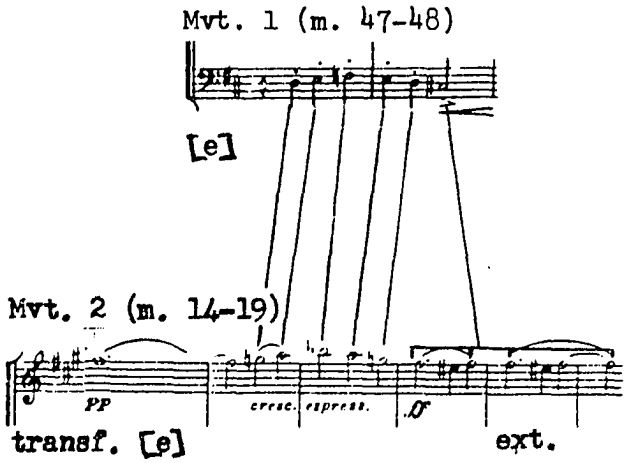


The pedal tones of the closing measures of movement one lead smoothly to the sustained chorale texture which characterizes theme A of movement two. The influence of the tritone is apparent in the f#-c root relationship of the vertical structures at measures 4-5 and in the g-c# pitch frame of motive [k] in the cello at measures 6-8.

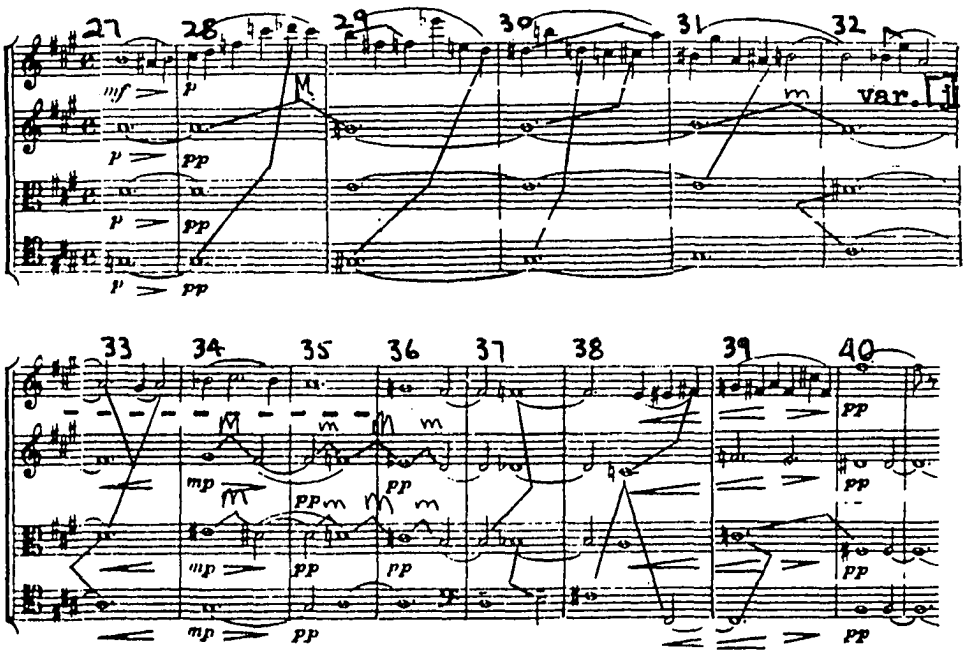
As shown on the line score alternating scalar patterns are emphasized at measures 4-6 and 14-17. Example 6:9 describes measures

14-19 in the first violin as a transformation of motive [e] accomplished by augmentation, change of meter, and extension. This transformation permeates the second violin and viola lines by means of their parallelism with the first violin contour.

Ex. 6:9

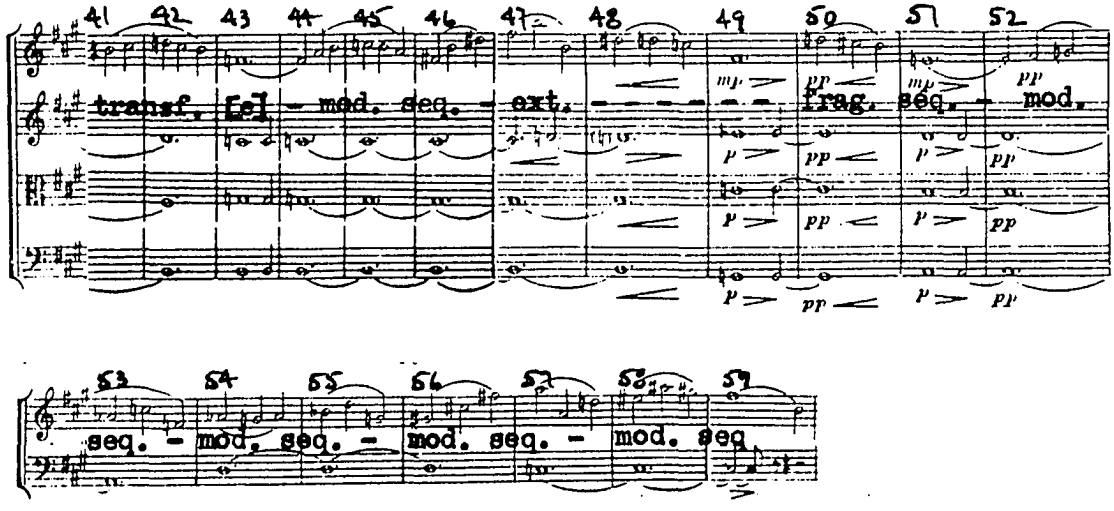


TRANSITION



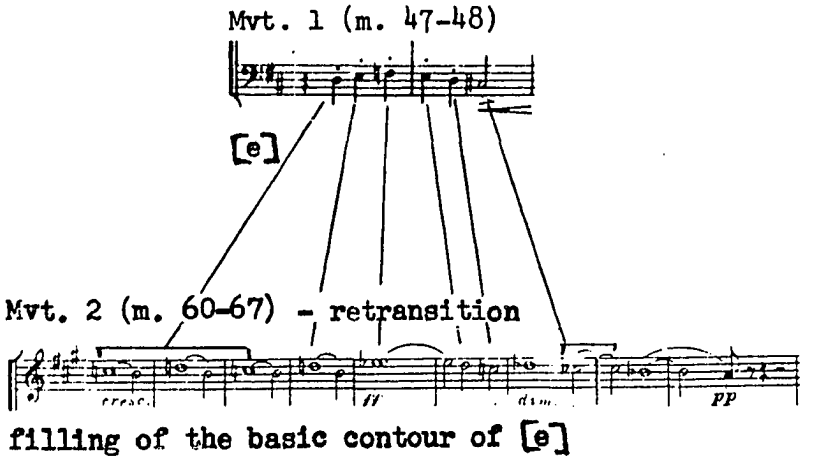
The sustained pedal tones (pedal chords) and the first violin recitative of this transition impress the ear as familiar; attention has been called to the pedal tones as one of the most prominent sounds of this quartet. In the discussion of movement one attention was directed to a similar texture at measures 23-26 and 134-137 which served as transition to statements of theme Ib of that movement; the same texture and the same recitative type linear material are now serving as transition to theme B in movement two.

THEME B



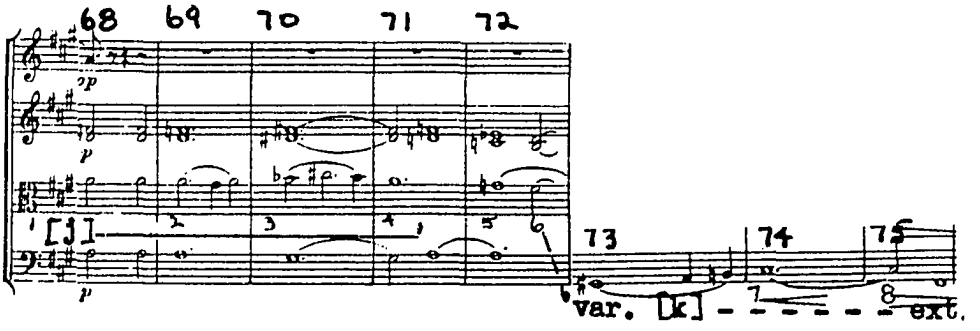
Like the transition area discussed just above, theme B is a first violin recitative supported by sustained vertical structures in the lower three instruments. The transformation of motive [e] in the first violin at measures 41-43 is similar to the transformation which was noted at measures 14-19 of this movement. As shown in example 6:10 the first violin contour at measures 60-67 suggests a filling of the basic contour of motive [e].

Ex. 6:10



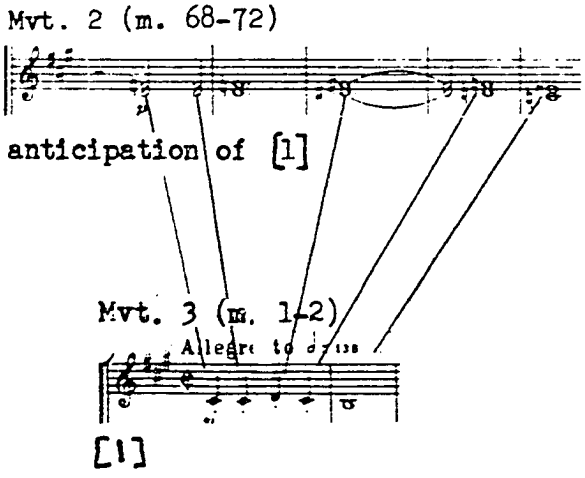
filling of the basic contour of [e]

THEME A'

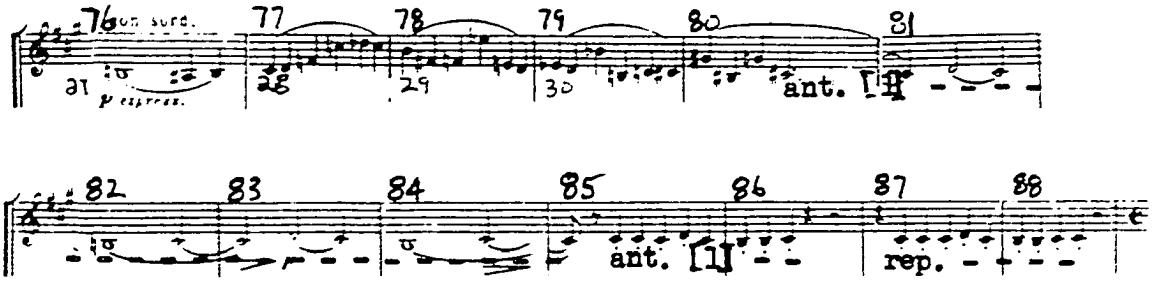


This severely truncated recurrence of theme A contains a single statement of each of its two prominent motives: [j] and [k]. The measure numbers of the recurring portion of the original statement are shown on the line score. An anticipation of the contour of motive [l] is shown in example 6:11.

Ex. 6:11

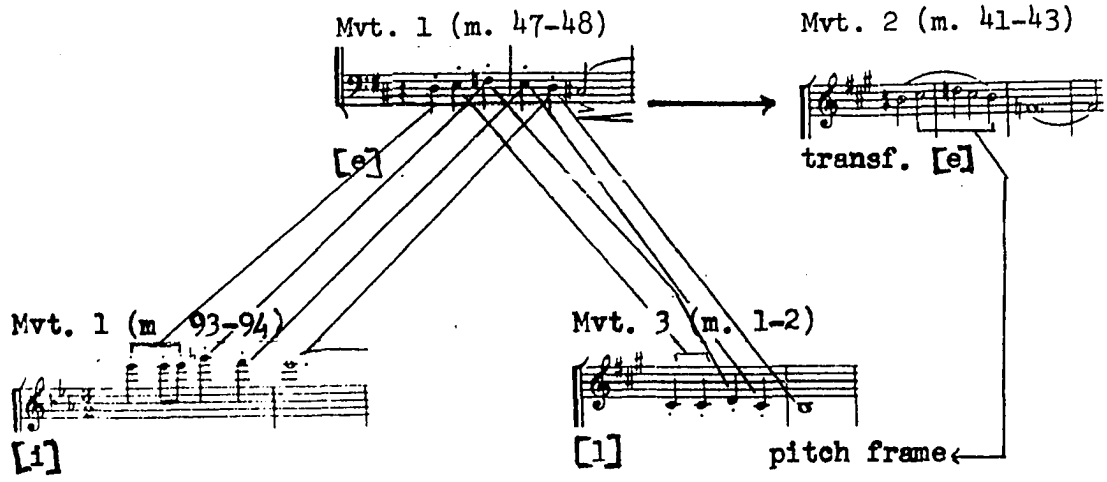


TRANSITION



This transition to movement three begins with a recurrence of measures 27-30; the remainder is devoted to anticipation of motive [1]. As shown in example 6:12 motive [1] like [i] is a transformation of motive [e].

Ex. 6:12



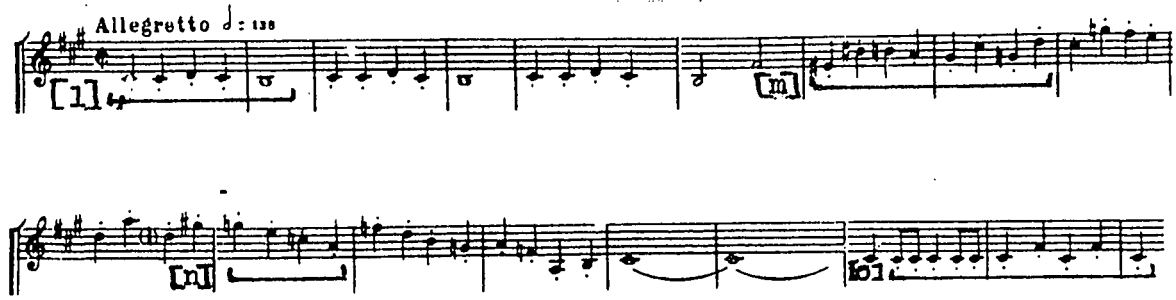
Summary

Although in different proportion the three prominent aural events of theme Ia of movement one were all observed in movement two: (1) pedal tones, (2) the tritone, and (3) alternating scalar patterns. Sustained pedal tones are prominent in the transition to theme B (m. 27-36), theme B (m 41-67), and the transition to movement three (m. 76-80). While one or more tritones were prominent in all areas of this movement, especially in the transition to theme B and theme B itself, no single tritone was found to carry any structural significance in the manner of the e^{b}-a tritone of movement one. Although instances of alternating scalar patterns were found they tend to be somewhat more isolated and less aurally prominent than the alternating patterns of movement one. At measures 80-88 anticipation of the contour and pitch frame of motive [1] (the first aural stimulus of movement three) provides a transition to movement three.

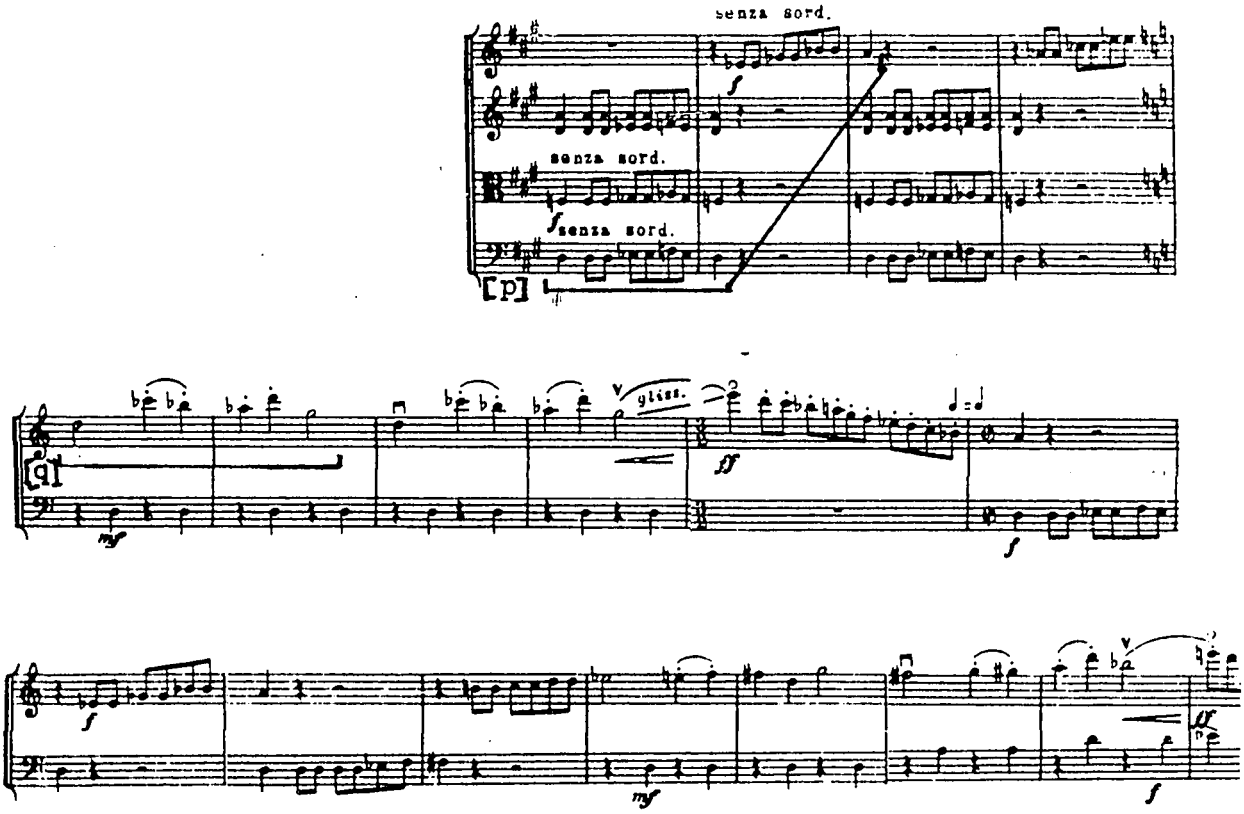
THEMATIC INDEX

Ninth Quartet
Movement Three

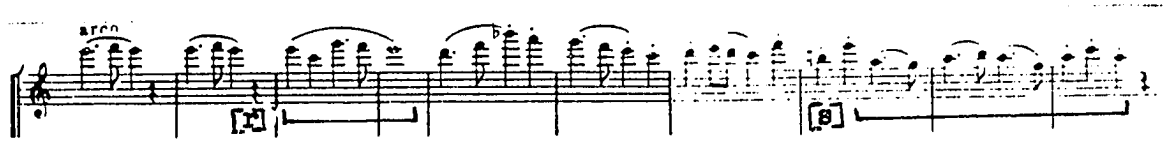
THEME Ia



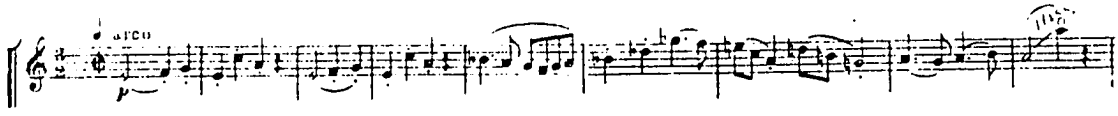
THEME IIa



THEME IIIa



THEME IIIb



GRAPHIC ANALYSIS OF FORMAL STRUCTURE

Third Movement — Allegretto - F# - Arch Form - 281 measures - ¢ meter.

Thematic Area I		transition	
A	A'	[m]	[p]
1	24	50	
F#			

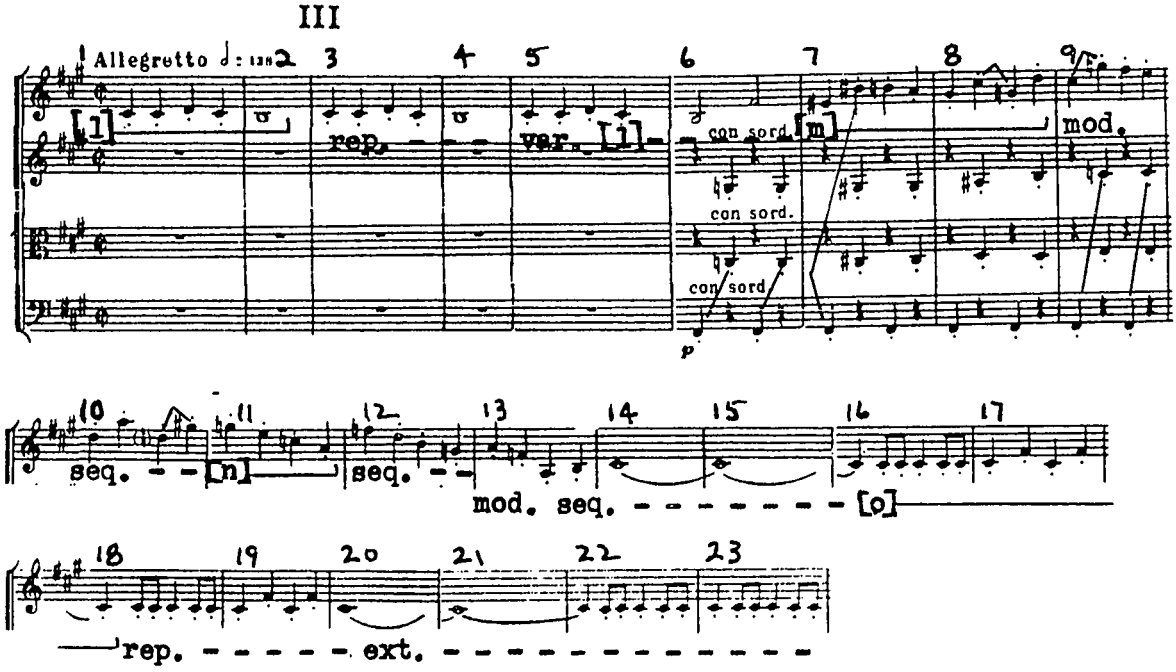
Thematic Area II	
A	A'
61	88
D:	

Thematic Area III			retransition				
A	B	A	[o]	[p]	[l]	[r]	[s]
137	149	160	170				
A:							

Thematic Area II'	retransition
A	[o]
191	208
D:	

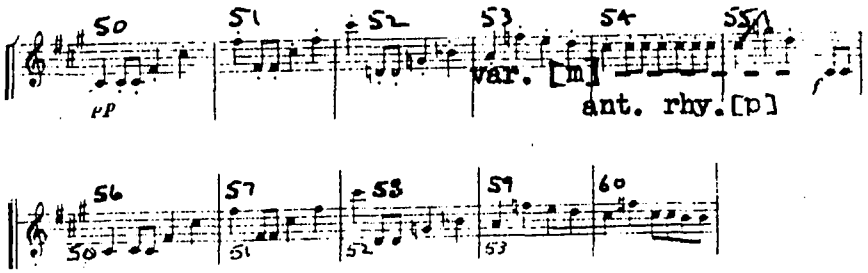
Thematic Area I'		transition to Movement Four		
A	A'	[l]	[u]	[t]
218	239	266		
C:	F#:			

THEME Ia



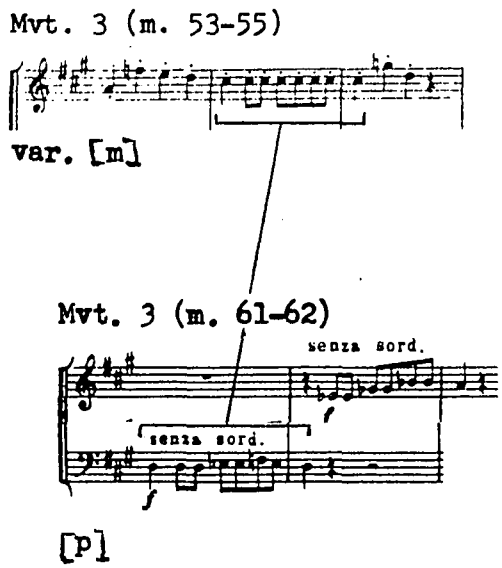
The three prominent aural events of theme Ia of movement one are quickly apparent in theme Ia of movement three: (1) pedal tones, (2) tritones, and (3) alternating scalar patterns. As was observed in movements one and two, pedal tones and tritones far outweight alternating scalar patterns in prominence. Of the four prominent motives of theme Ia only [m] displays an alternating pattern: b#-b-a-g#. Motives [n] and [o] are accommodated within an alternating scale constructed from the F# tonal center of theme Ia: f#-g-a-b^{b}-c-d^{b}-e^{b}-e. No new techniques of motivic manipulation were observed in the varied repeat of theme Ia at measures 24-49.

TRANSITION

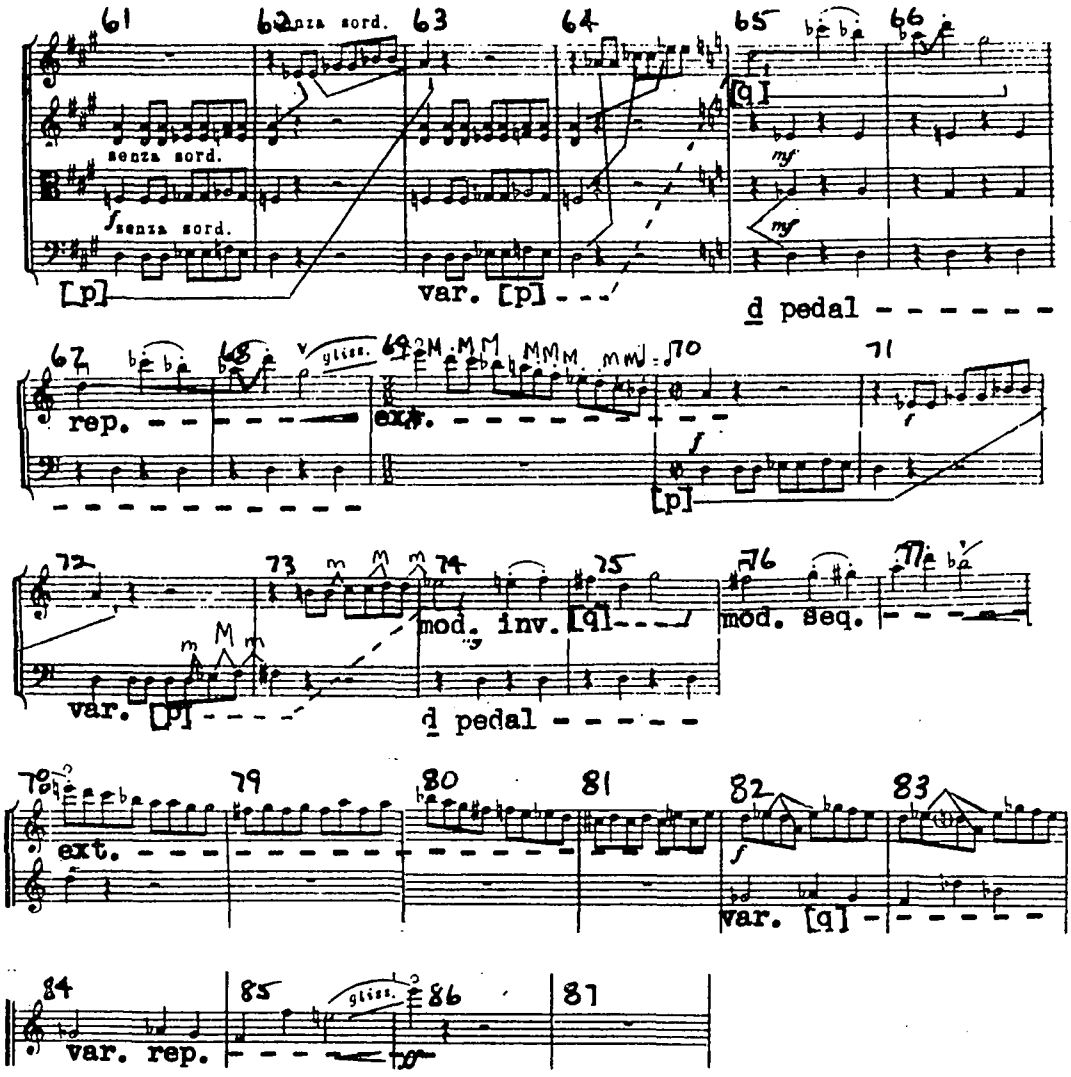


This transition begins at an extension of the f# cadence chord which closes thematic area I. The ♩♫ ♩ ♩ | ♩ rhythmic pattern is a variant of the rhythm of motive [o]. As shown in example 6:13 the rhythm of measure 54 anticipates the prominent ♩ ♩♫ | ♩♫♫♫ rhythm of motive [p].

Ex. 6:13



THEME IIa

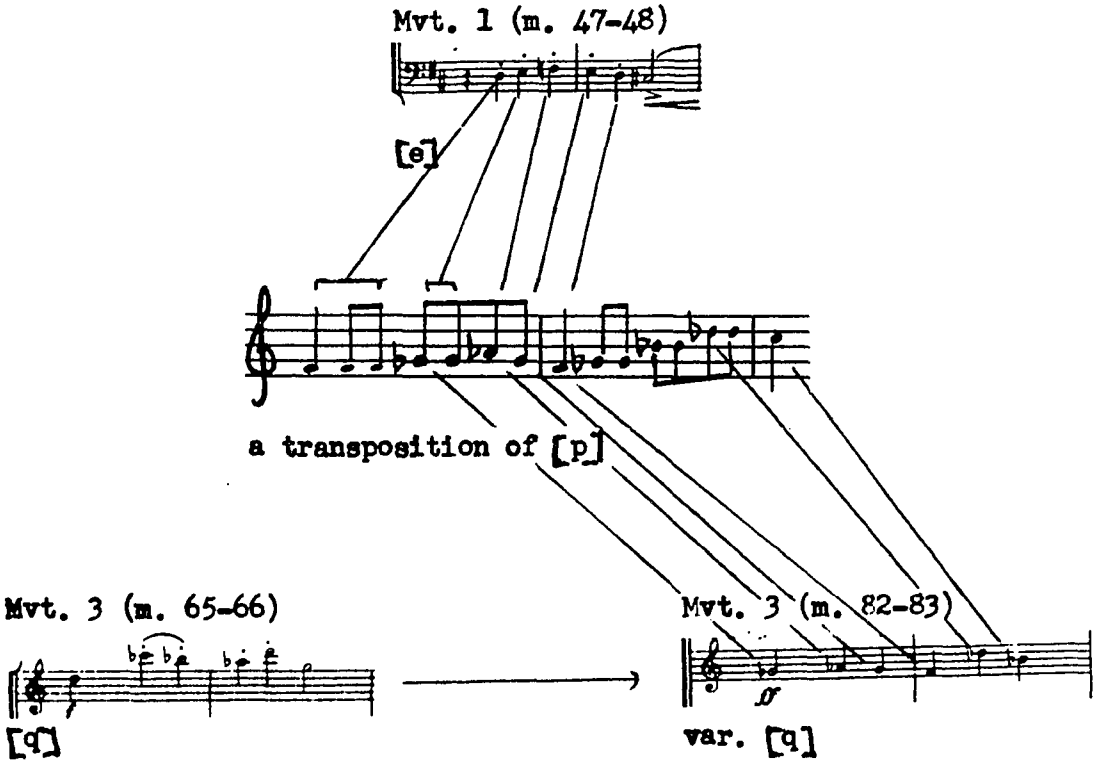


The d pedal tone at measures 65-68 and 74-75 and tritones of theme IIa are shown on the line score. Except for the b^b in the first violin at measure 62 all pitches in all instruments at measures 61-64 belong to an alternating scale constructed from the D tonal center of theme IIa: d-e^b-f-g^b-a^b-a-b-c. Thus an increased influence of the alternating scale is noted.

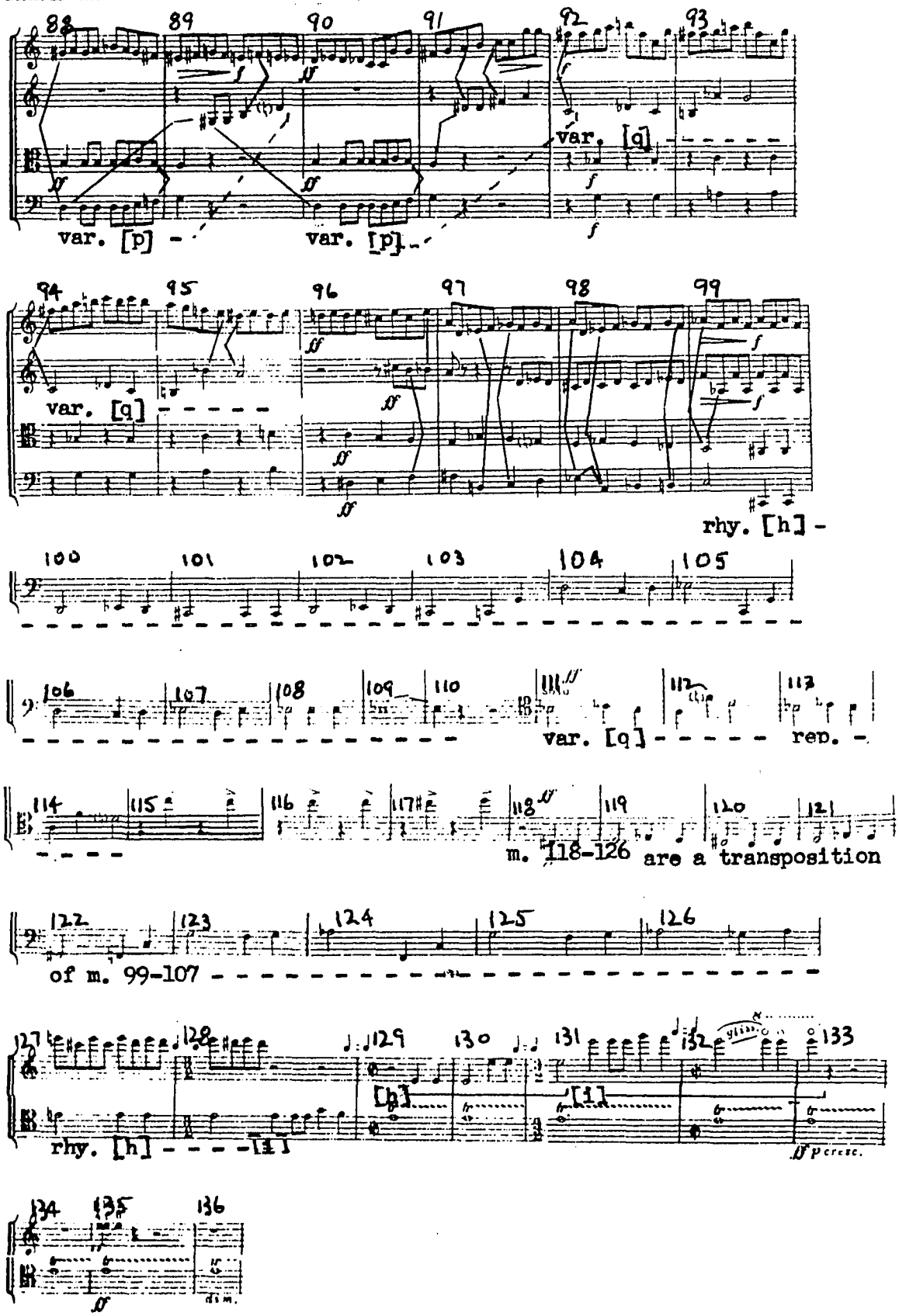
Motive [q] is a member of the family of motives which show an influence of the alternating scalar pattern, for the pitches of [q] are accommodated within an alternating pattern constructed from the D tonal center of theme IIa: d-(e-f)-g-a^{b}-b^{b}-c^{b}-(d^{b}).

Example 6:14 shows that the variation of [q] in the second violin at measures 82-83 bears a remarkable affinity to the contour of motive [p] while the first fragment of [p] strongly suggests an origin in motive [e].

Ex. 6:14

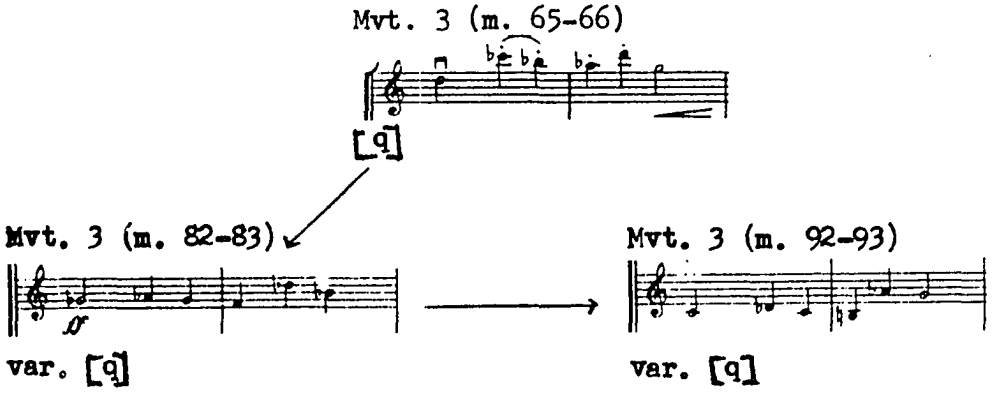


THEME IIa'


88
89
90
91
92
93
var. [p]
var. [p]
var. [q]
94
95
96
97
98
99
var. [q]
rhy. [h]
100
101
102
103
104
105
106
107
108
109
110
111
112
113
var. [q]
rep.
114
115
116
117
118
119
120
121
m. 118-126 are a transposition
122
123
124
125
126
of m. 99-107
127
128
129
130
131
132
133
[h]
[i]
rhy. [h]
[i]
134
135
136
dim.

As may be observed on the line score neither motive [p] nor [q] recur in theme IIa' in their original form. The variants of motive [p] in the cello and second violin at measures 88-92 show a conspicuous tritone influence in the diminished triads of their second fragment (g#-b-d and d#-f#-a). The variant of [q] in the second violin at measures 92-95 maintains the rhythm and the basic contour of the original motive; as shown in example 6:15 this variant is a continuation of the variation techniques observed at measures 82-83.

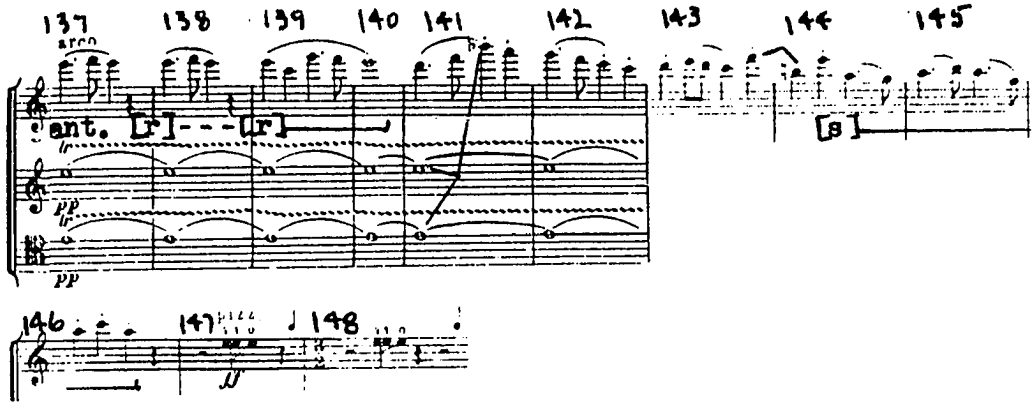
Ex. 6:15



These two variants of [q] feature intervallic expansion and contraction while maintaining the rhythm and basic contour of motive [q].

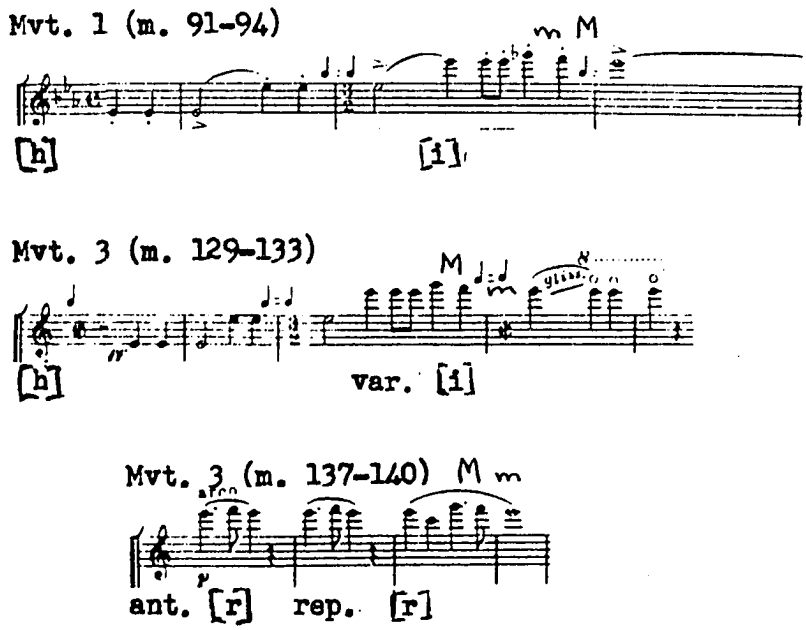
At measures 99-108 the cello line is influenced by the ♩ ♩ | 𝅗𝅥 ♩ ♩ | 𝅝 rhythm of motive [h]; as shown on the line score this contour is transposed at measures 118-127 and leads to varied statements of motives [i] and [h] at measures 128-132. The prominent trill of thematic area III is anticipated at measure 129.

THEME IIIa

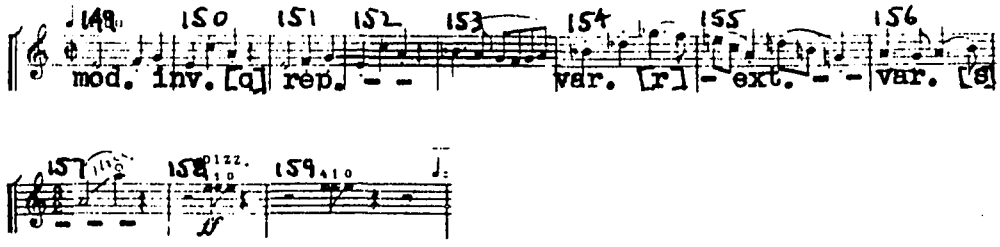


Two tritones may be observed on the line score while the prominent pedal tones are self-evident. No alternating scalar patterns were found in thematic area III. As shown in example 6:16 a marked affinity exists between the first four measures of theme IIIa and motives [h] and [i]. The latter have just recurred at the close of theme IIa' where alteration of the last two intervals of [i] has occurred in order to prepare motive [r].

Ex. 6:16

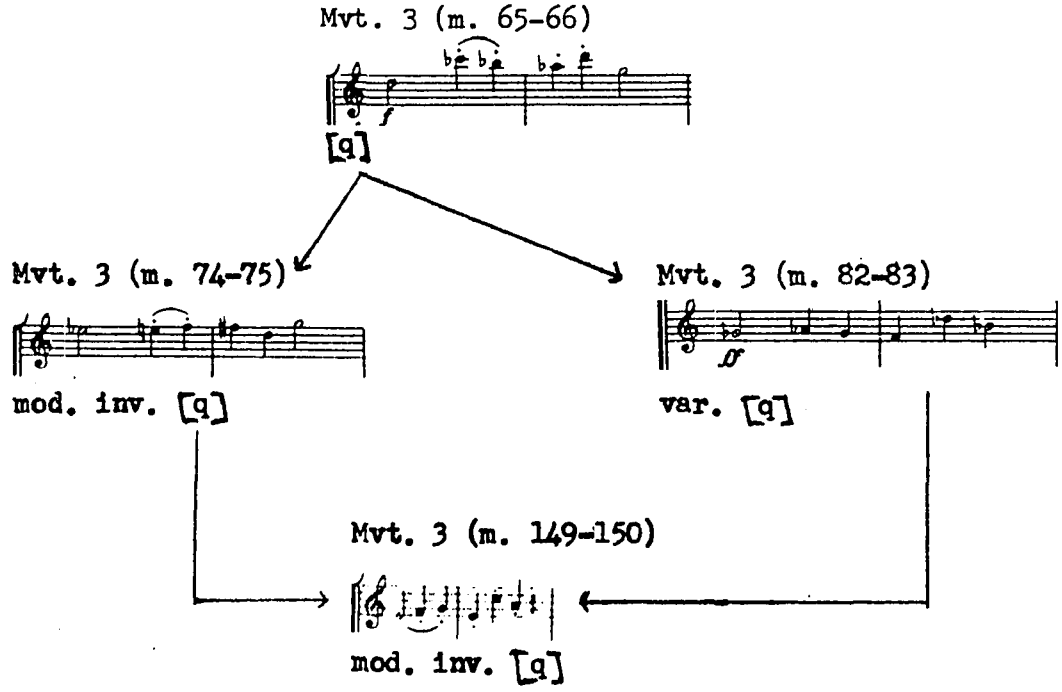


THEME IIIb



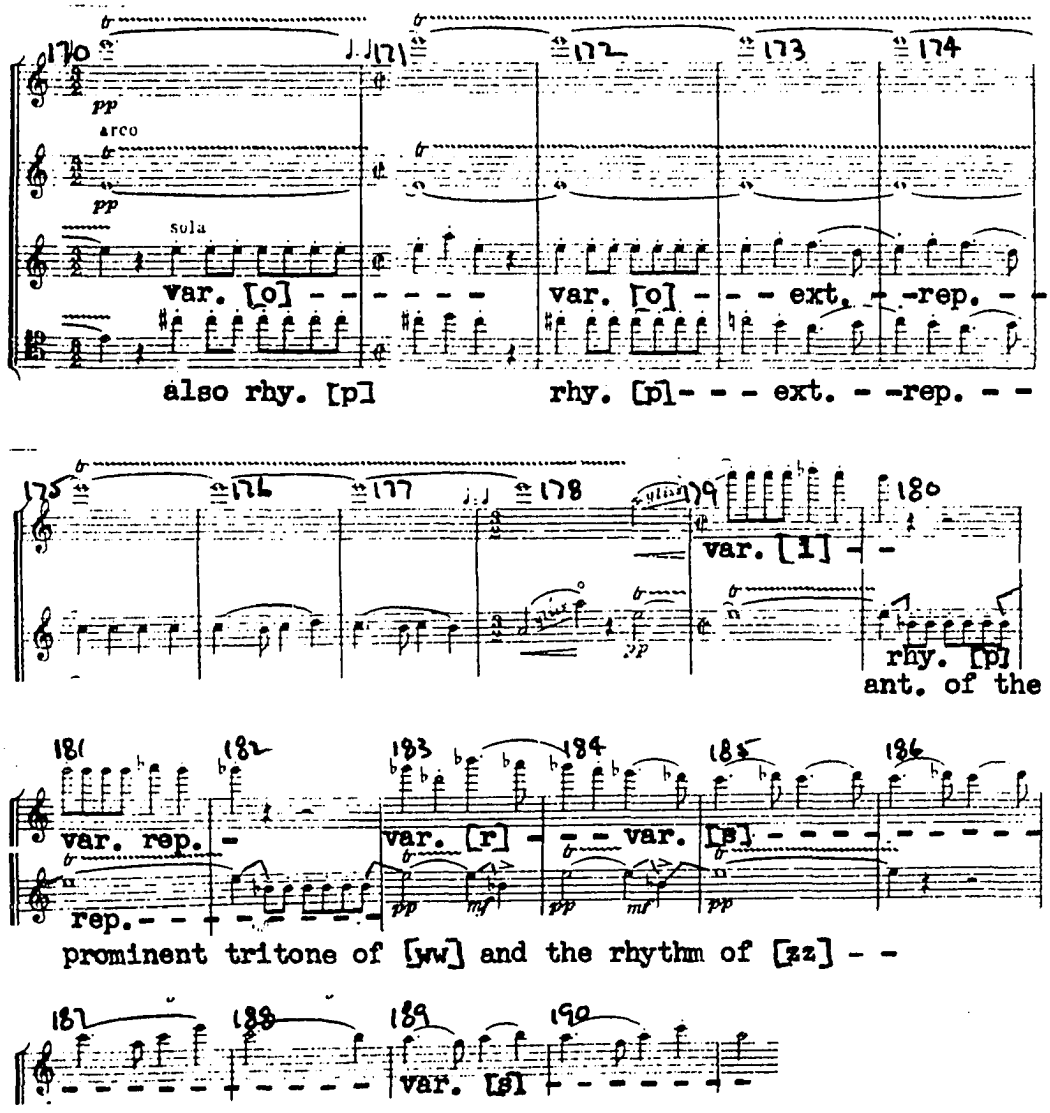
The techniques of motivic manipulation in theme IIIb are shown on the line score. Example 6:17 shows that the variant [q] at measures 149-150 is a descendant of the original motive by way of two previous variants.

Ex. 6:17



No new techniques of motivic manipulation were observed in the recurrence of theme IIIa at measures 160-169.

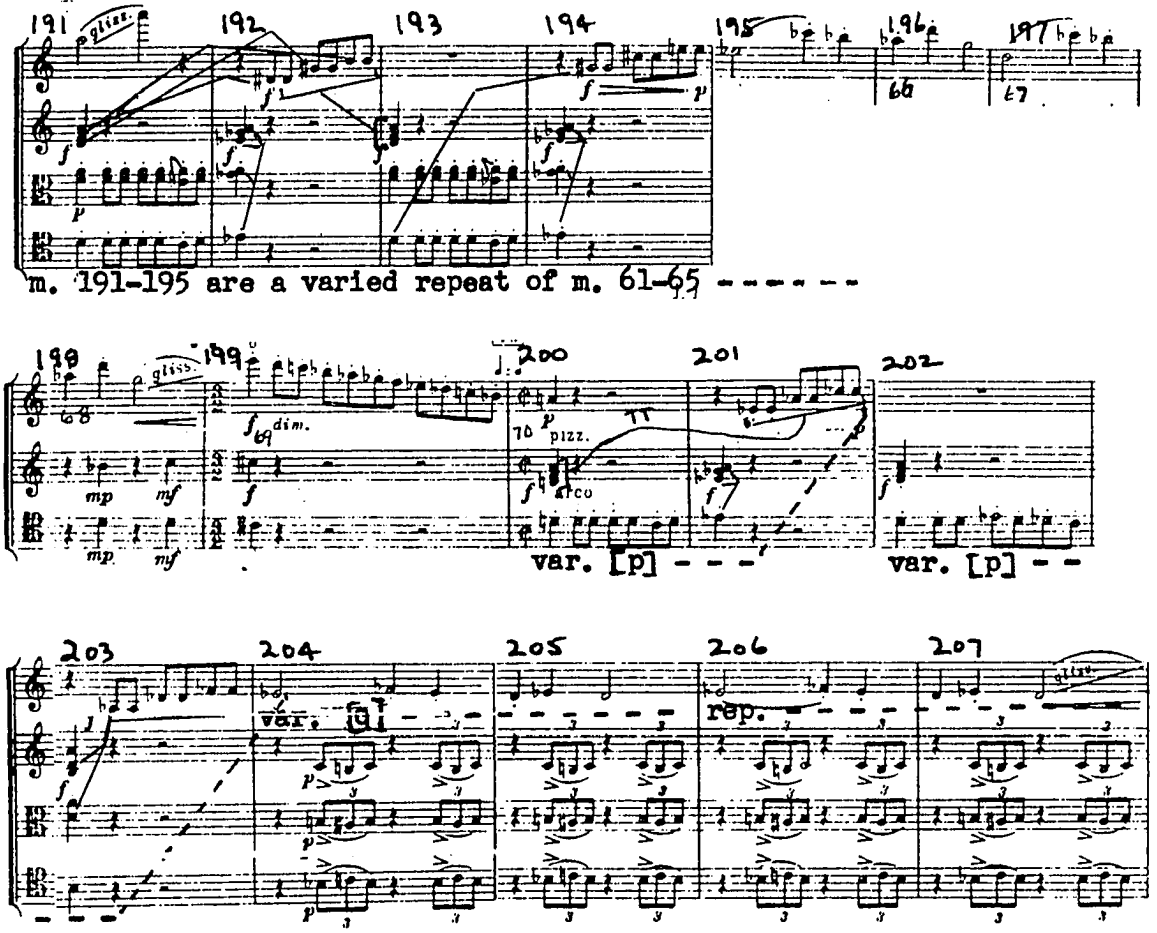
RETRANSITION



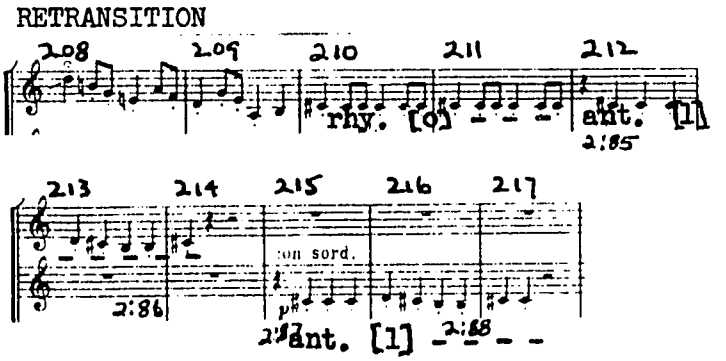
The techniques of motivic manipulation in this retransition may be observed on the line score. While no influence of the alternating scale is evident, pedal tones in the form of the prominent

e trill are evident. The tritone e-b^{b} is prominent at measures 180-185.

THEME IIa''



As shown on the line score the prominent sounds of theme IIa recur in varied form; the original measure numbers of recurring linear material are shown on the line score. The triplet figure at measures 204-207 is a variant of the written-out trill. The variant [q] in the first violin at measures 204-207 maintains the rhythm and the basic contour of the original while contracting all of its intervals to minor seconds.



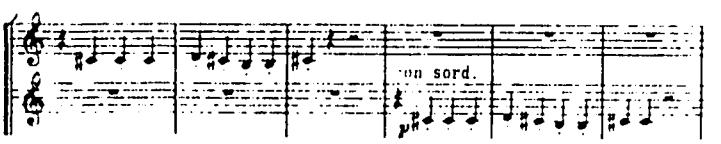
The techniques of motivic manipulation in this retransition are shown on the line score. In example 6:18 measures 212-217 of this retransition are a recurrence of the last four measures of movement two.

Ex. 6:18

Mvt. 2 (m. 85-88)

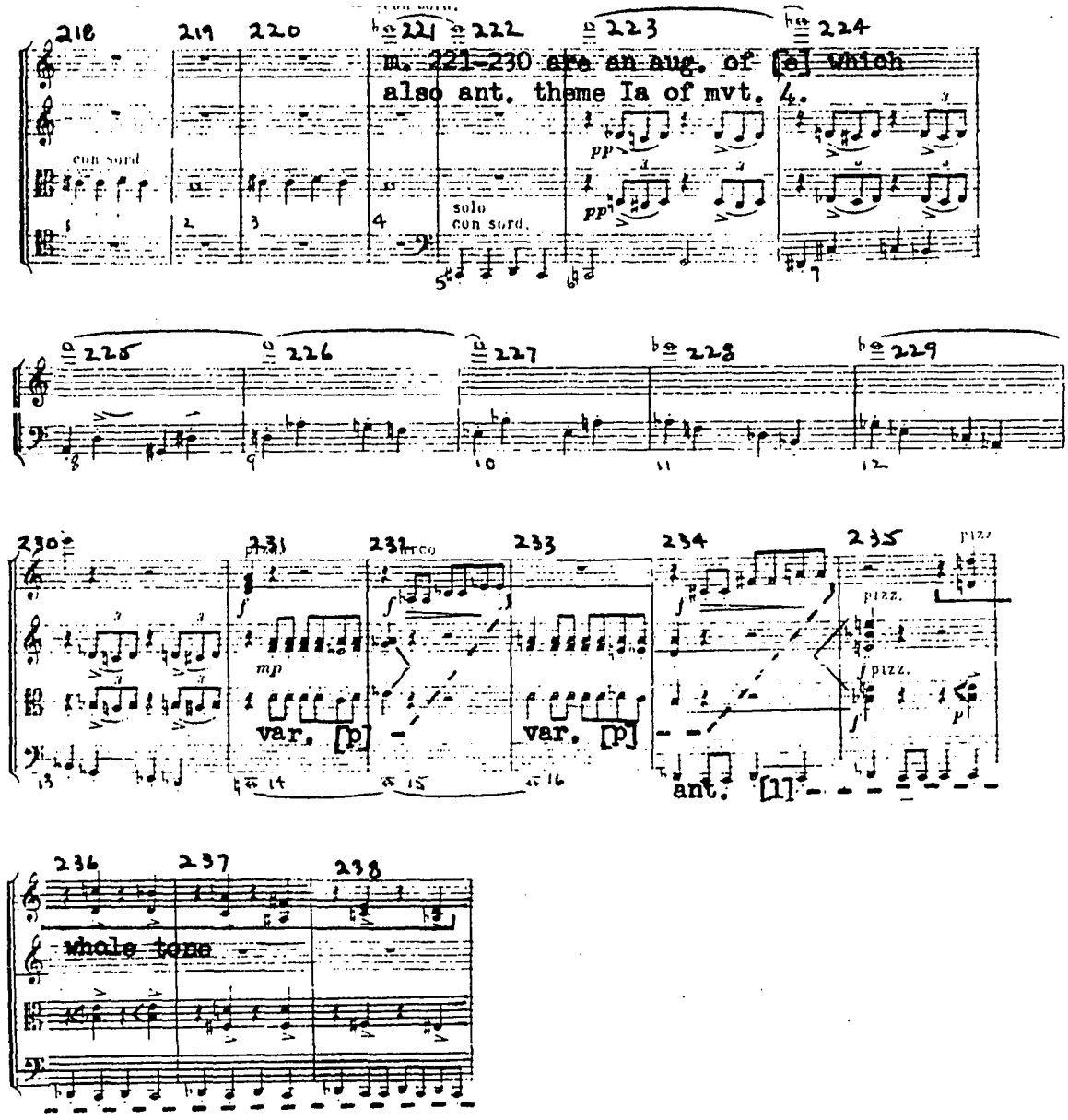
The closing measures of movement two anticipate motive [1] the first aural stimulus of movement three.

Mvt. 3 (m. 212-217)



The closing measures of a retransition to thematic area I anticipate motive [1] which will be the first aural stimulus of a recurrence of theme Ia (m. 218-233).

THEME Ia



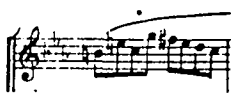
As shown on the line score this varied return of theme Ia consists basically of measures 1-16 of the original statement; measures 6-16 are transposed. The triplet figure (a varied form of the written-out trill) from measures 204-207 is found in the second violin and viola. All of the sounds of the original statement recur plus an aug-

mentation of motive [e] in the first violin at measures 221-230. In retrospect it may be observed that this augmentation is anticipating theme Ia of movement four (see example 6:21, p. 239).

At measures 235-238 the first violin articulates a descending whole-tone scale. As shown in example 6:19 this is not a new sound. Attention is called to the whole-tone influence at this point because this is the first time a complete whole-tone scale has been apparent in the four quartets investigated in this study.

Ex. 6:19

Mvt. 1 (m. 25)



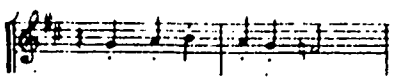
(f#-e-d-c)

Mvt. 1 (m. 27-29) - beginning of theme Ib

(c-b^{b}-a^{b}-g^{b}-f^{b})

A descending whole-tone pattern at measure 25 prepares the beginning measures of theme Ib of movement one.

Mvt. 1 (65-66)



(b-a-g-f)

A recurrence of motive [e] displays a whole-tone pattern.

Ex. 6:19 continued

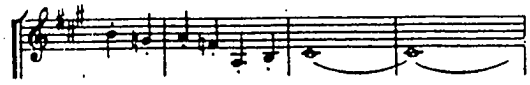
Mvt. 2 (m. 6-7)

(g-a-b-c#)

[k]

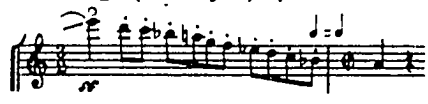
Motive [k] is constructed of ascending whole tones.

Mvt. 3 (m. 12-15)



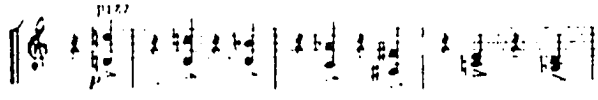
The first violin line articulates five pitches of the whole-tone scale from c#: c#-(d#)-f-g-a-b.

Mvt. 3 (m. 69-70)



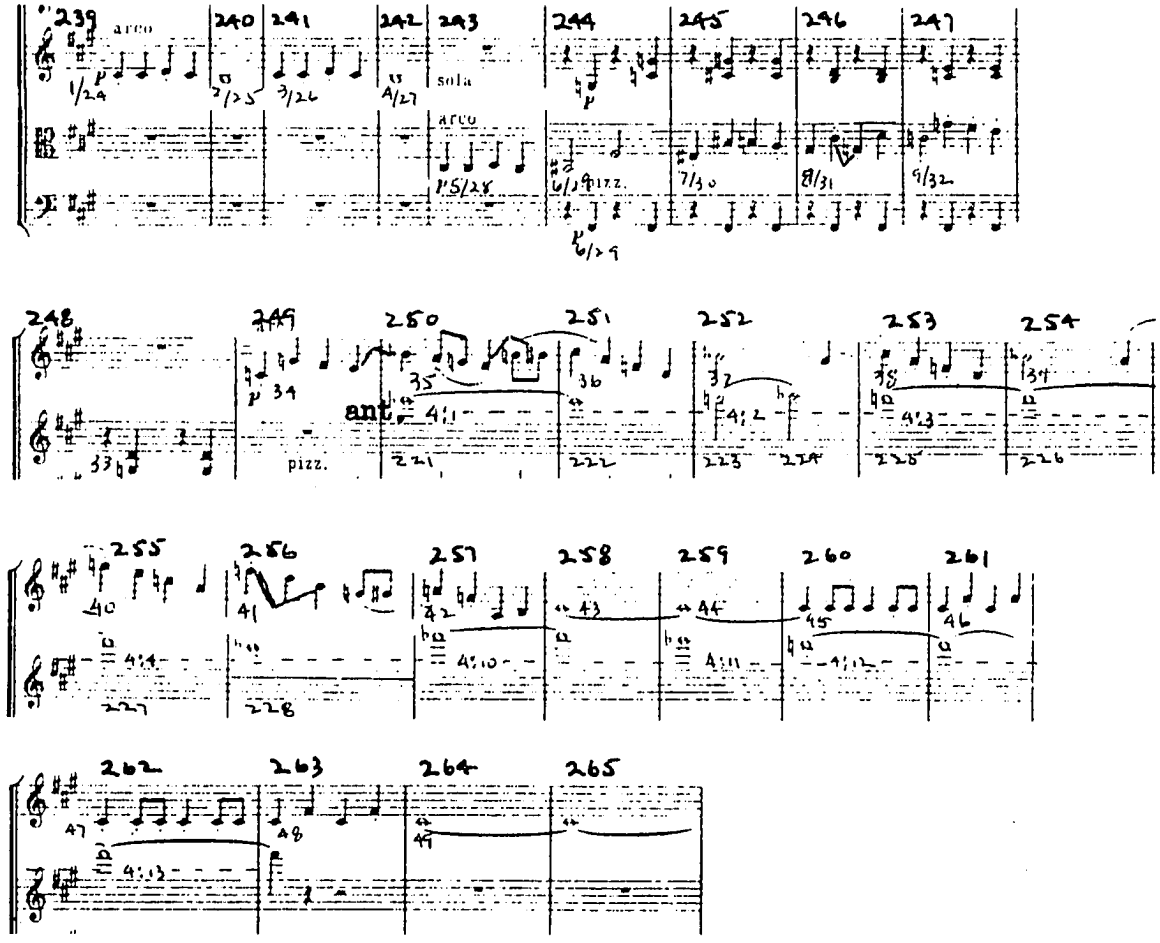
Although this descending scale pattern is a mixture of whole and half steps it contains two four-note whole-tone patterns. Were it not for the initial e the total pattern would describe a locrian scale from a.

Mvt. 3 (235-238)



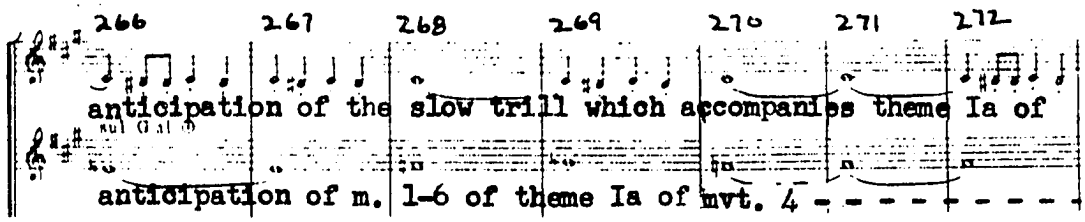
All pitches in this first violin line belong to a whole-tone scale constructed from the initial d: d-c-b^{b}-a^{b}-f#-e-d. This is the first occurrence of a complete whole-tone scale within the quartets under study.

THEME Ia'

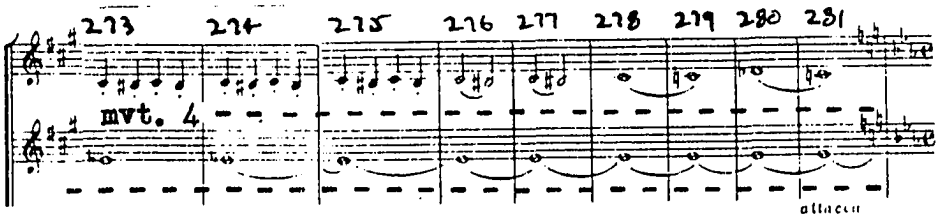


The original measure numbers of recurring linear material are shown on the line score. Measures 250-256 in the first violin show a varied recurrence of the augmentation of motive [e] from measures 221-228. At the same time this line is noted in retrospect as an anticipation of theme Ia of movement four (see example 6:21, p. 239).

TRANSITION



TRANSITION continued



In this transition to the movement which follows, the first and second violin contours are both preparing for the emergence of theme Ia of movement four. The first violin prepares the pitches $\underline{d^{b}}$ and $\underline{c}$ for the slow trill which accompanies theme Ia of movement four while the second violin anticipates the first six measures of that theme. In addition to the preparation of theme Ia and its accompaniment of movement four, this transition by gradation to longer note values effects a written-out ritard thus preparing for the adagio tempo of movement four.

Summary

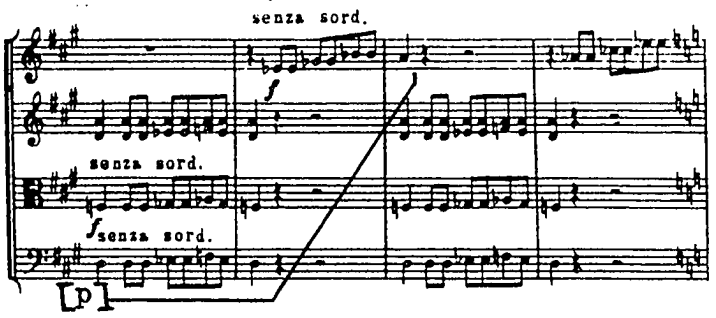
Although in different proportion the three prominent aural events of theme Ia of movement one were all observed in movement three. Pedal tones in various forms were found to be prominent throughout thematic areas I and III and were somewhat less prominent in thematic area II. The characteristic sound of the tritone which continued as a prominent feature of thematic areas I and II was less prominent in thematic area III.

While motive [m] contains a prominent alternating scalar pattern (b#-b-a-g#) and motives [l], [n], and [o] are accommodated within an alternating scale constructed from the F# tonal center of

thematic area I (f#-g-a-b^b-c-d^b-e^b-e), alternating patterns are not aurally prominent in thematic area I. No alternating patterns were observed in thematic area III. As shown in example 6:20 the initial statements of motives [p] and [q] suggest the use of two different alternating patterns constructed from the D tonal center of thematic area II.

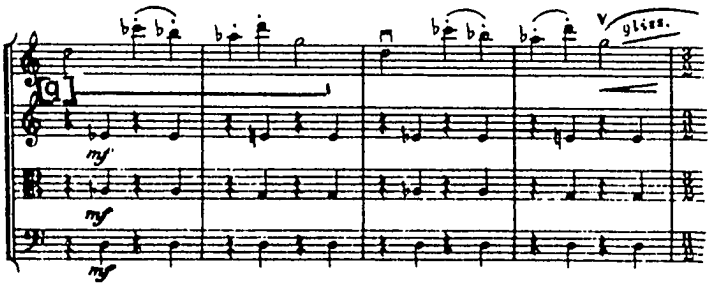
Ex. 6:20

Mvt. 3 (m. 61-64)



Except for the $\underline{b^b}$ in the first violin at measure 62 all pitches in all instruments belong to the alternating minor second/major second pattern constructed from the D tonal center of thematic area II: d-e^b-f-g^b-a^b-a-b/c^b-(c).

Mvt. 3 (m. 65-68)

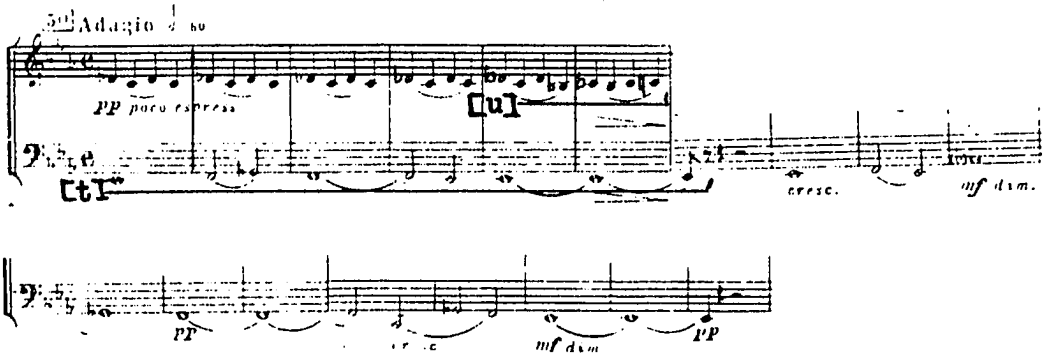


Except for the $\underline{e^b}$ in the second violin at measures 65 and 67 all pitches in all instruments belong to the alternating major second/minor second pattern constructed from the D tonal center of thematic area II: d-e-(f)-g-a^b-b^b-c^b-(d^b).

THEMATIC INDEX

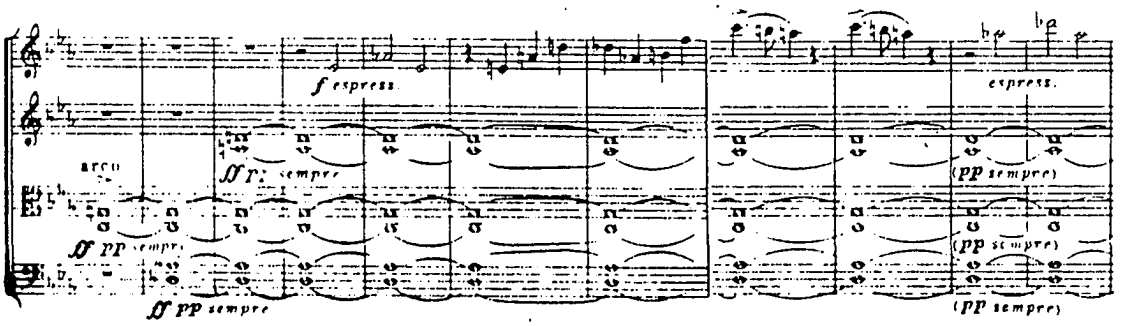
Ninth Quartet
Movement Four

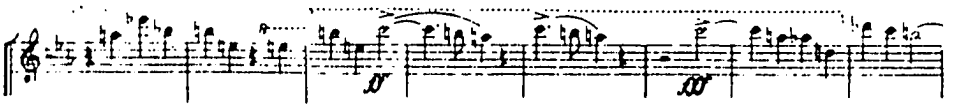
THEME Ia

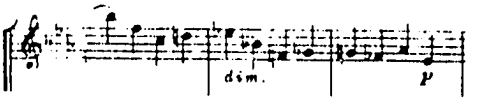


THEME Ib

THEME IIa







GRAPHIC ANALYSIS OF FORMAL STRUCTURE

Fourth Movement — Adagio - E^b - Compound Ternary - 95 measures - $\frac{4}{4}$ meter.

Thematic Area I

A	B	A'
1	20	27

E^b:

Thematic Area I'

A	B	A'
37	45	51

E^b:

Thematic Area II — retransition

58 — [u] 80

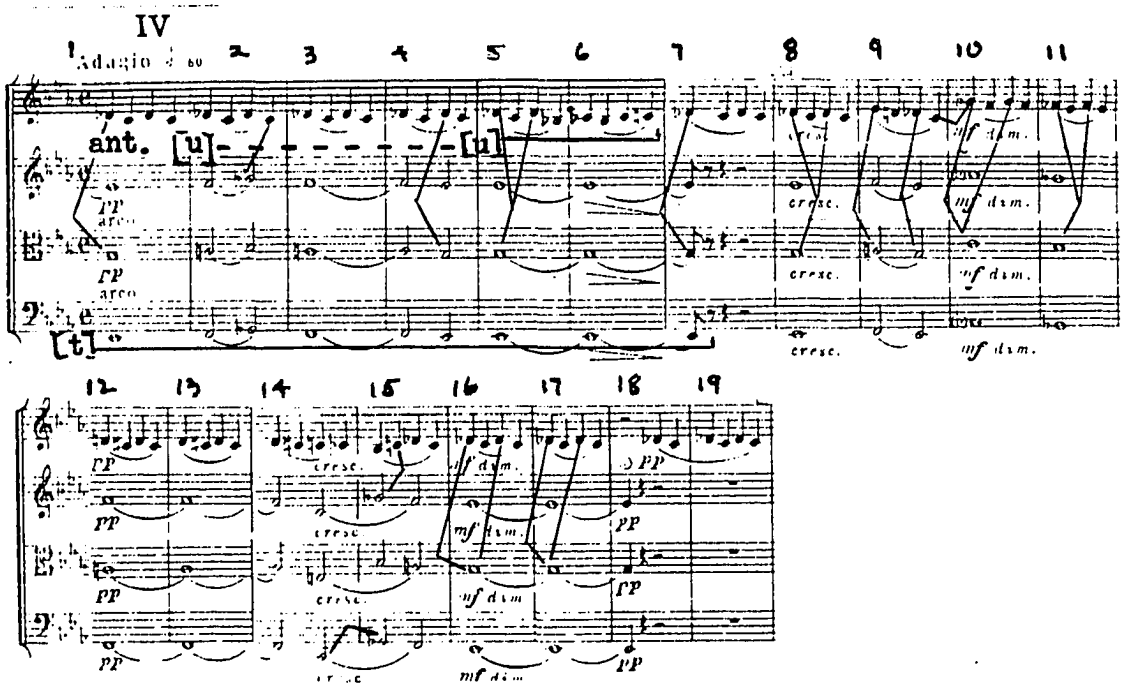
E^b:

Thematic Area I — transition to Movement Five

A — [u] [w]
83 — 94

E^b:

THEME Ia

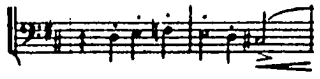


A slow trill form of the pedal tone is apparent on the line score at measures 1-4 in the first violin. The prominent tritones of theme Ia are shown on the line score. All of the pitches of theme Ia (second violin and cello) are accommodated within an alternating scale constructed from the E^b tonal center of Ia: e^b-f-g^b-a^b-a-b-c-d.

As shown in example 6:21 the familiar sound of motive [t] is due to its prominent anticipation in the last 60 measures of movement three and to the fact that the heredity of this contour may be traced to motive [e].

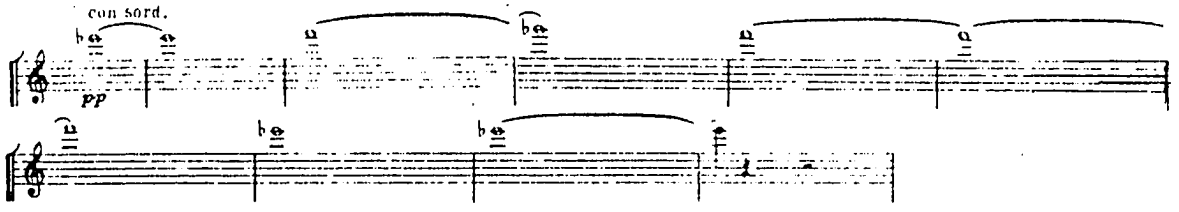
Ex. 6:21

Mvt. 1 (m. 47-48)

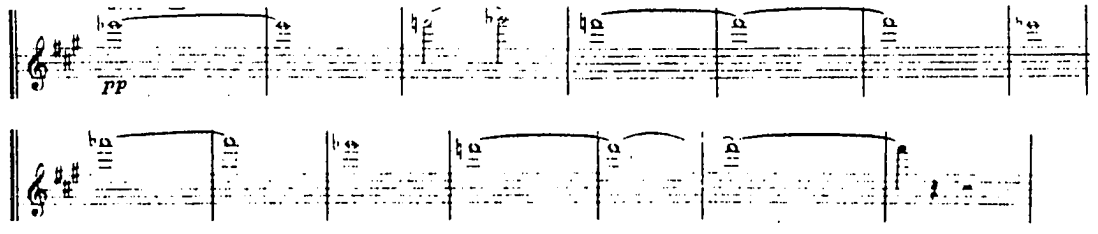


[e]

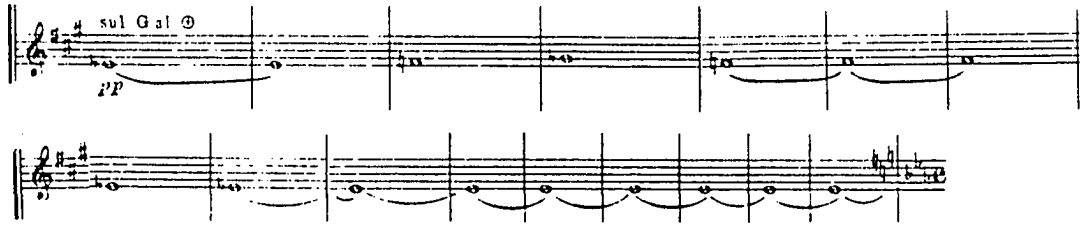
Mvt. 3 (m. 221-230)



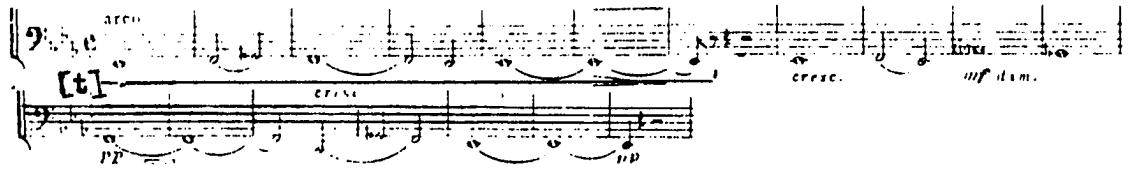
Mvt. 3 (m. 250-263)



Mvt. 3 (m. 266-281)

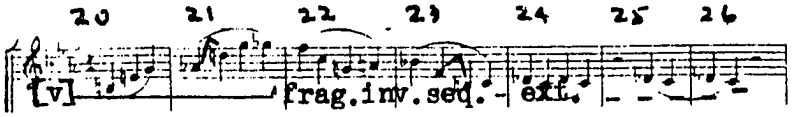


Mvt. 4 (m. 1-18)



The contour of theme Ia of movement four is anticipated in the last 60 measures of movement three.

THEME Ib

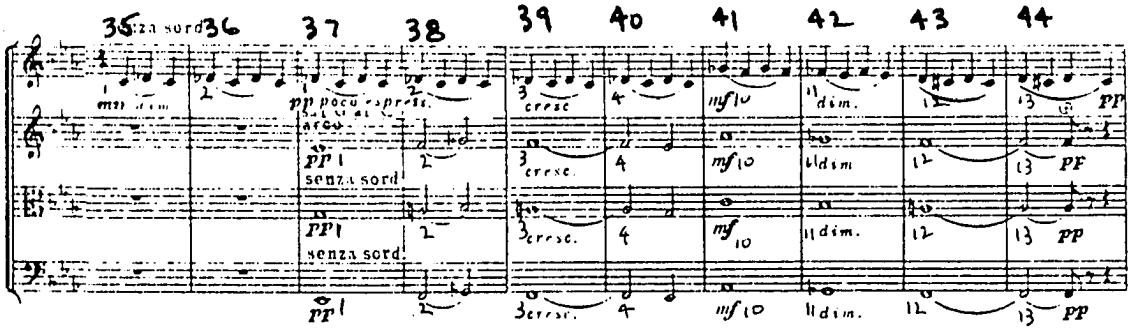


Theme Ib makes use of the recitative style which was observed in the transition (m. 27) and theme B (m. 41) of movement two as well as in the transition areas of movement one. The transitions from movement two to movement three and from movement three to movement four also feature a recitative style melodic line.

THEME Ia'

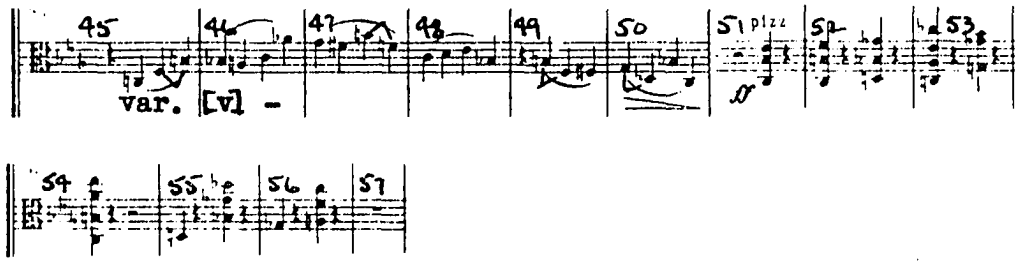
Although the fortissimo pizzicato of theme Ia' is not readily heard as related to theme Ia, the top pitches of the successive multiple stops outline the contour of measures 1-4 and 10-16 of that theme. Measures 35-36 act as a brief preparation for a recurrence of thematic area I.

THEMATIC AREA I'



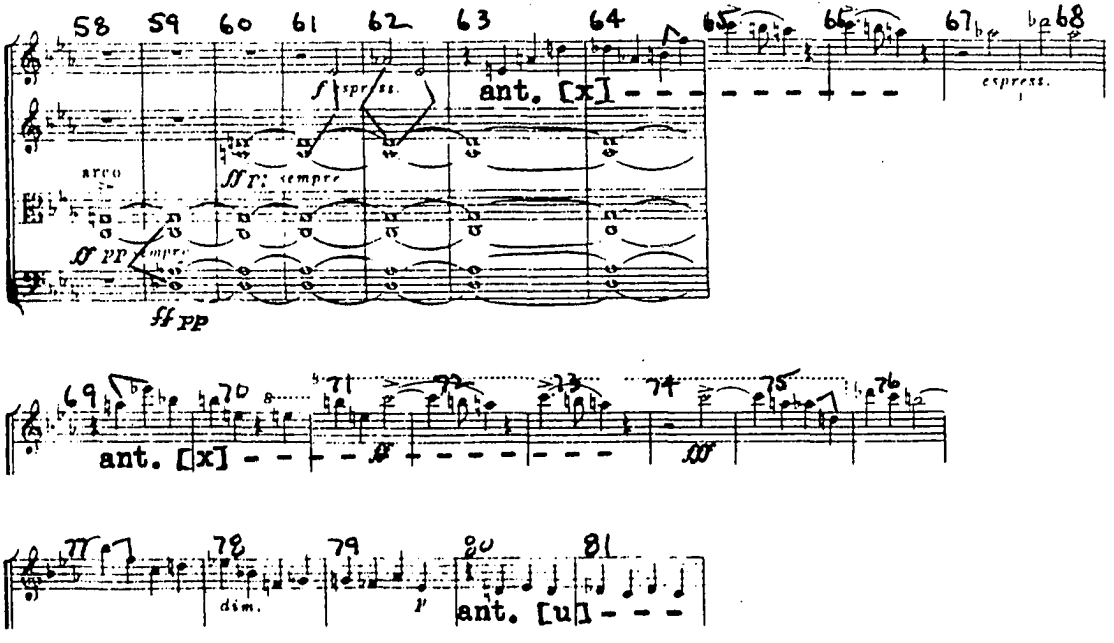
THEMATIC AREA I' continued

THEME Ib THEME Ia'



Measures 37-57 are a recurrence of measures 1-36; although varied and abbreviated the ternary structure of the original is retained. It is observed in retrospect that the variant [v] at measures 45-46 suggests an anticipation of the contour of motive [x]. The emergence of [x] is shown in example 6:23 (pp. 249-251).

THEME IIa



The double pedal tones of the three lower instruments and the tritones of theme IIa are shown on the line score. The anticipations of motive [x] at measures 63-66 and 69-73 are detailed in example 6:23 (pp. 249-251). Measures 80-82 act as a brief preparation for the recurrence of measures 1-4 and 10-18 of theme Ia at measures 83-94. Measures 94-95 serve as a brief transition to movement five; the contribution of this contour to the emergence of motive [w] is shown in example 6:22 (pp. 247-249).

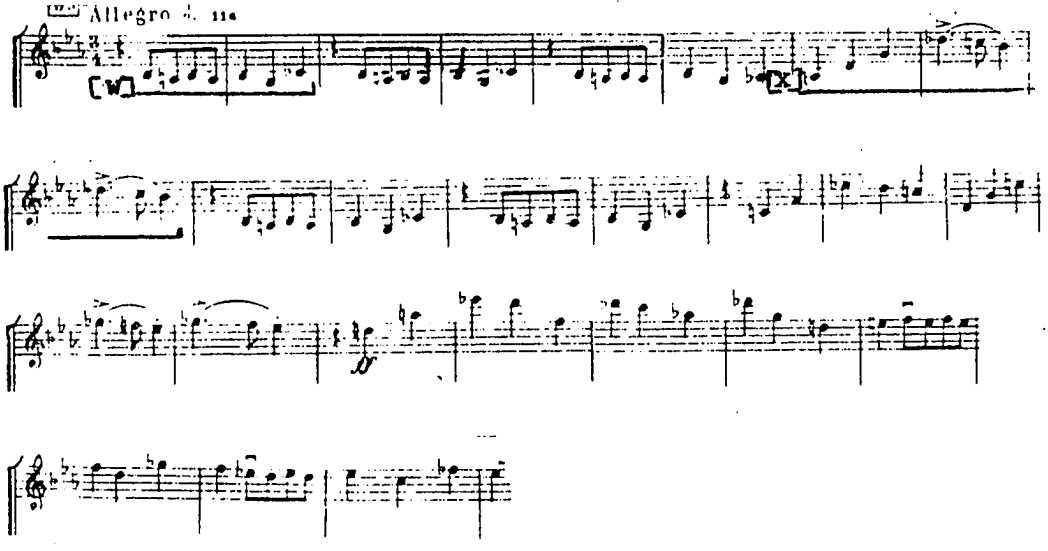
Summary

The use of pedal tones in the form of a slow trill was observed in theme Ia while three different sustained double pedals support the recitative style of theme IIa. Although heard in both thematic areas I and II the tritone is especially prominent in theme Ia. No prominent alternating scalar patterns were observed in this movement, however, theme Ia is accommodated within an alternating scale constructed from the E^{b} tonal center of theme Ia: e^{b}-f-g^{b}-a^{b}-a-b-c-d.

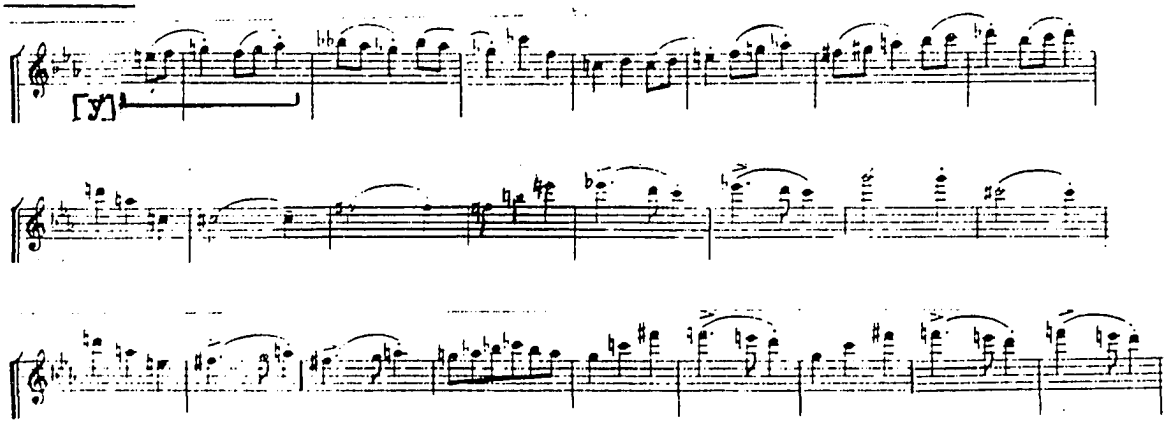
THEMATIC INDEX

Ninth Quartet
Movement Five

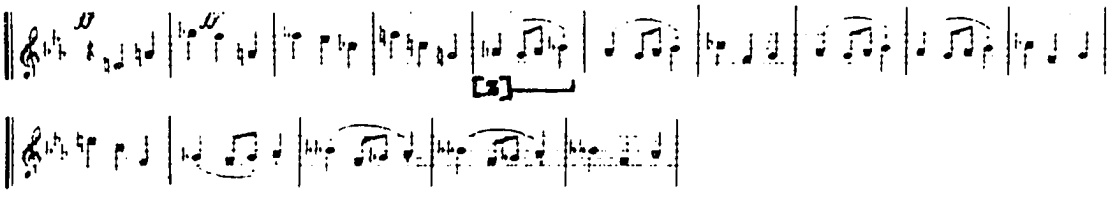
THEME Ia



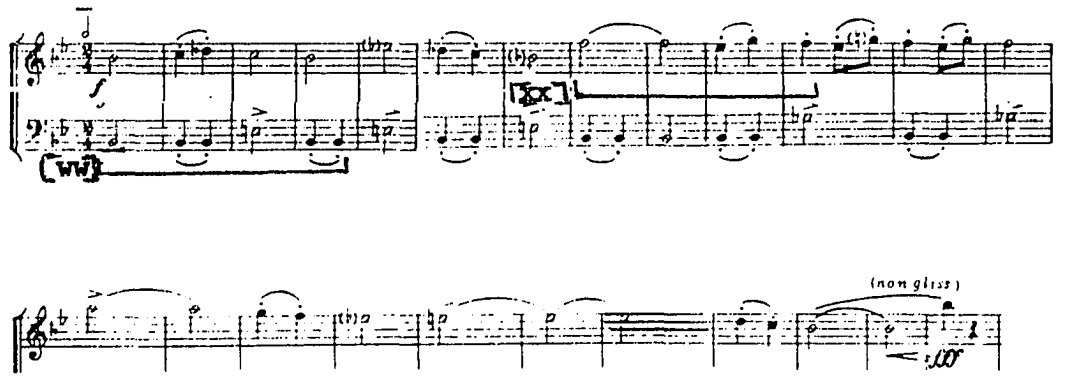
THEME Ib



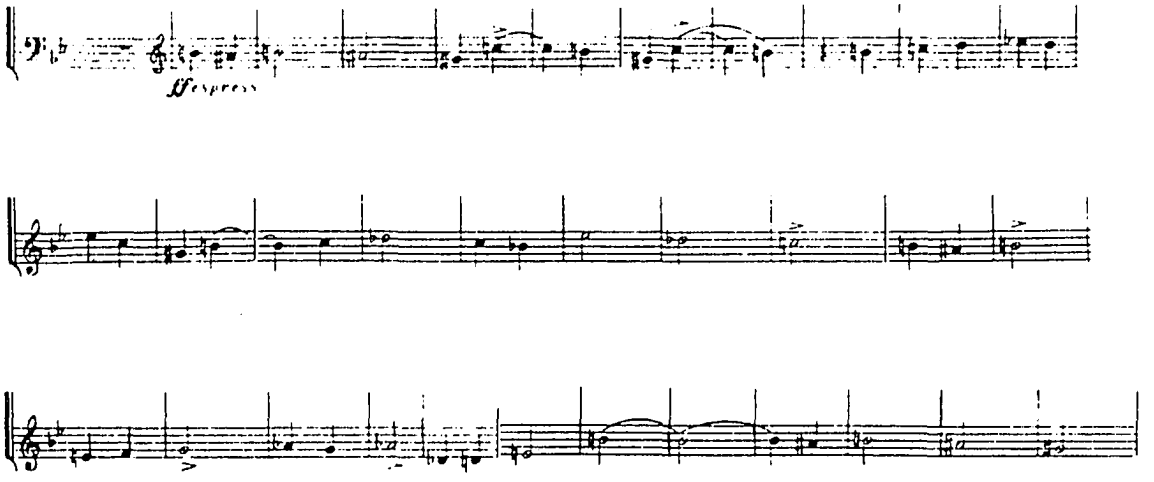
THEME Ic



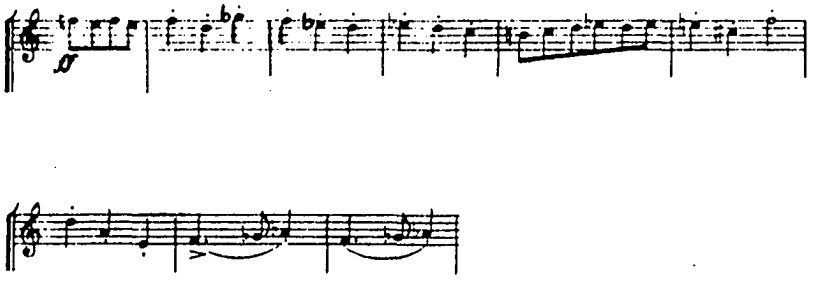
THEME IIa



THEME IIb



FUGUE THEME



GRAPHIC ANALYSIS OF FORMAL STRUCTURE

Fifth Movement — Allegro - E^b - Sonata - 709 measures - mixed meter

$\frac{3}{4}$ Thematic Area I — transition

A	B	A	A'	C	A''	[ww]
1	34	B	73	90	116	126
E^b:		42				

$\frac{2}{4}$ Thematic Area II

A	B	A
152	215	276
B^b:	E:	B^b:

$\frac{3}{4}$ Development section

1.	2.	3.	4.
[w] [x]	[yy] [w] [x]	fugue	4:II and 4:Ia'
311	350	414	504

¢ Thematic Area I'

A	A'
534	567
E^b:	

¢ Thematic Area II'

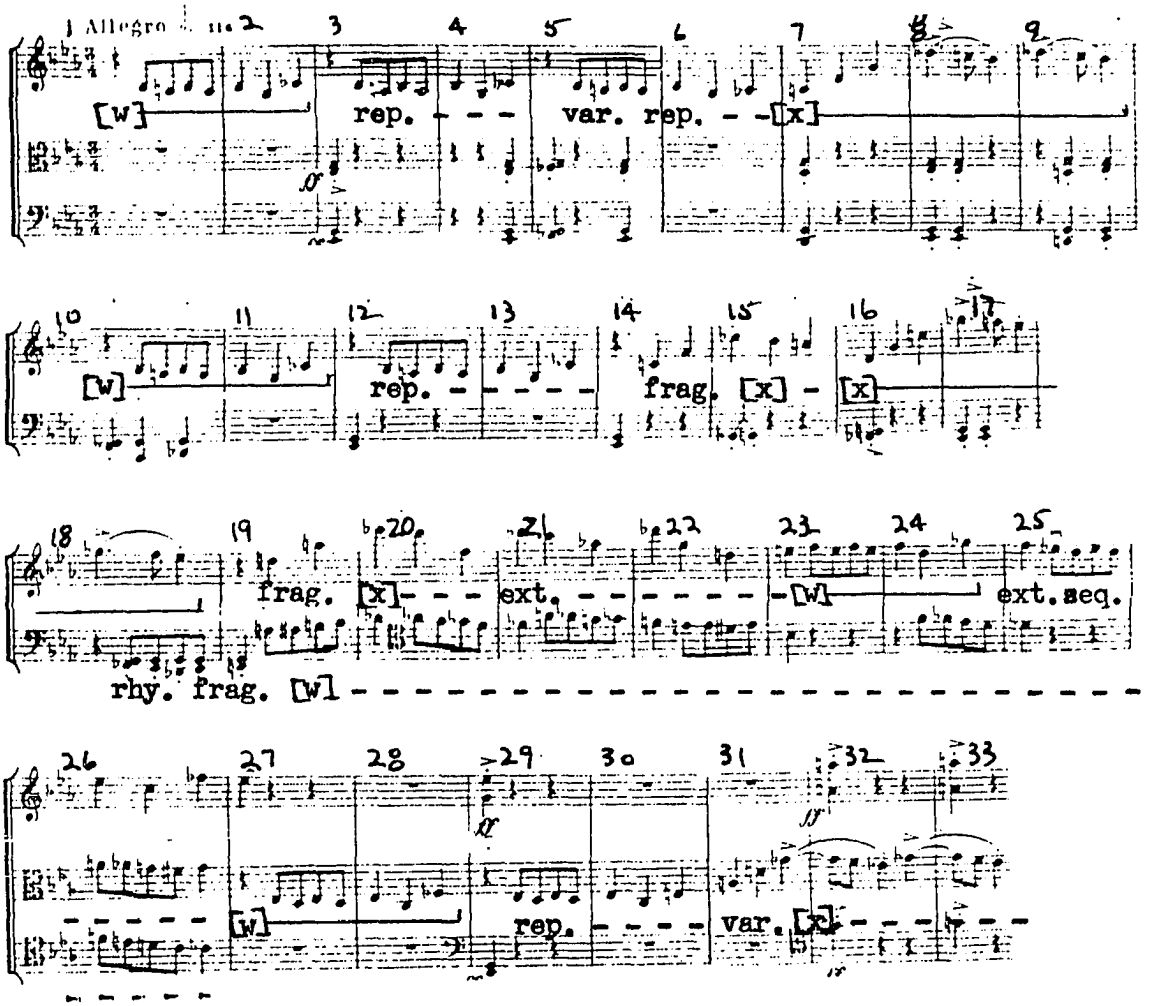
B	A
590	616
E:	B^b:

¢ and $\frac{3}{2}$ Coda Section

[x] [w] [xx] [o] [n] [h] [i]
640
E^b:

THEME Ia

V



The influence of the prominent pedal tones noted in the first four movements may be observed on the line score at measures 3-19 in the repeated g of the viola and cello. The tritone is a prominent interval of motive [x] whose first statement is made by the first violin at measures 7-8. Although no alternating scalar patterns were observed in theme Ia and neither motive [w] nor [x] may be accommodated in an alternating scale, all pitches (except d at measures 7 and 9) of the viola and cello double-stops at measures 3-19 belong

to an alternating scale constructed from the E^b tonal center of theme Ia: e^b-f^b-g^b-g-(a-b^b)-c-d^b. The prominent minor third to major third expansion of the second fragment of [w] is a characteristic of the alternating scale. Expansion of a minor third to major quality or contraction of a major third to minor quality was noted a number of times in the seventh and eighth quartets.

Although it is not indicated as such on the line score, theme Ia is recognized aurally as a miniature ternary structure: idea (m. 1-18), departure (m. 19-26), and return (m. 27-33).

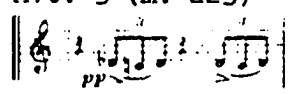
In the discussion of movement four attention was called to several contours which were anticipating the emergence of motives [w] and [x]. Example 6:22 examines the heredity of the contour of motive [w].

Ex. 6:22

Mvt. 1 (m. 1-4)

The written-out trill which is a prominent aural event of theme Ia of movement one occurs as accompaniment to the primary linear material of all movements.

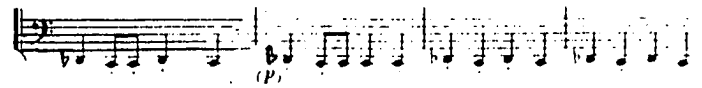
Mvt. 3 (m. 223)



A variant of the written-out trill assumes the pitches $\underline{d^b}$ and $\underline{c}$.

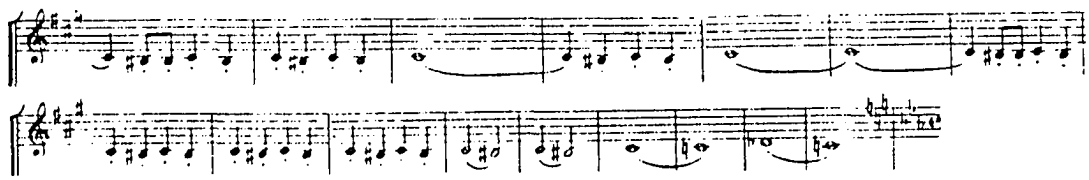
Ex. 6:22 continued

Mvt. 3 (m. 234-237)



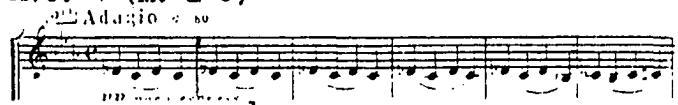
Augmentation of the written-out trill increases the prominence of the pitches $\underline{d^{b}}$ and $\underline{c}$.

Mvt. 3 (m. 266-281)



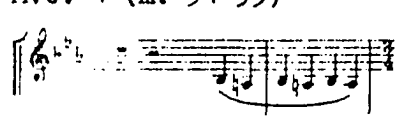
In the last sixteen measures of movement three a written-out ritard gives increased prominence to the c#/d^{b}-b#/c.

Mvt. 4 (m. 1-6)



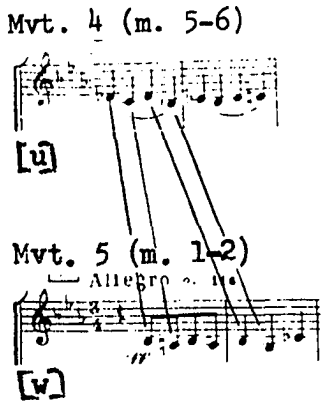
The slow trill on d^{b}-c continues into measures 1-4 of movement four where it anticipates the emergence of motive [u] at measures 5-6. A re-examination of the line of movement four shows this slow trill to be a prominent sound of three of the recurrences of theme Ia.

Mvt. 4 (m. 94-95)



In the last two measures of movement four the slow trill is heard on b^{b}-a which are the pitches of the trill fragment of motive [w].

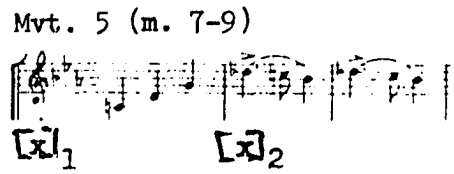
Ex. 6:22 continued



The b^b and a having been prepared in the previous excerpt the contour of motive [w] is now compared with [u].

Like motive [w] the contour of motive [x] has been amply prepared by a number of contours of the earlier movements. Example 6:23 shows a number of the most prominent of these contours.

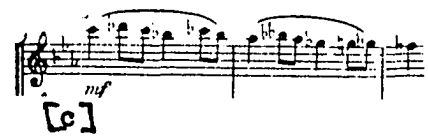
Ex. 6:23



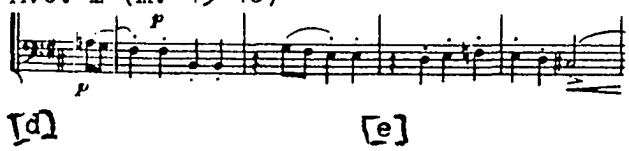
Motive [x] is constructed from two characteristic fragments: $[x]_1$ a pattern of ascending fourths and $[x]_2$ a pattern of three descending pitches which form a minor second and a major second.

Ex. 6:23 continued

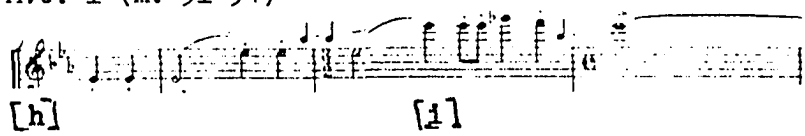
Mvt. 1 (m. 27-28)



Mvt. 1 (m. 45-48)

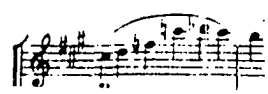


Mvt. 1 (m. 91-94)

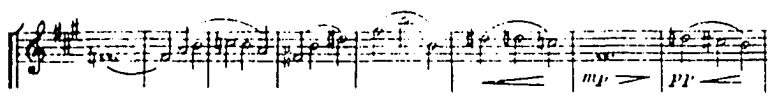


In movement one motives [c], [d], and [e] feature patterns which display the prominent descending minor plus major second of $[x]_2$. Motives [h] and [i] together suggest the general contour of both fragments of motive [x].

Mvt. 2 (m. 28)



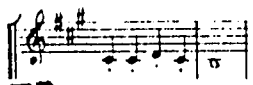
Mvt. 2 (m. 43-50)



In movement two several prominent shapes describe the basic contour of the combined fragments of [x].

Ex. 6:23 continued

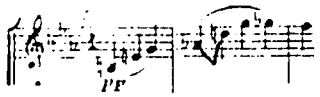
Mvt. 3 (m. 1-2)



[1]

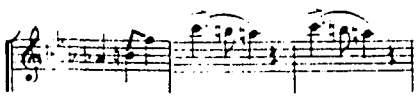
Motive [1] of movement three features the prominent descending half step, whole step of the second fragment of [x].

Mvt. 4 (m. 20-22)



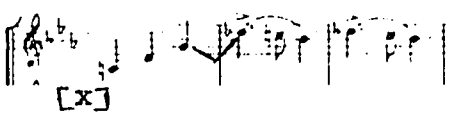
[v]

Mvt. 4 (m. 64-66)



In movement four motive [v] adds the tritone while suggesting the general contour of [x]. Measures 65-66 add the characteristic rhythm and repetition of the second fragment of [x].

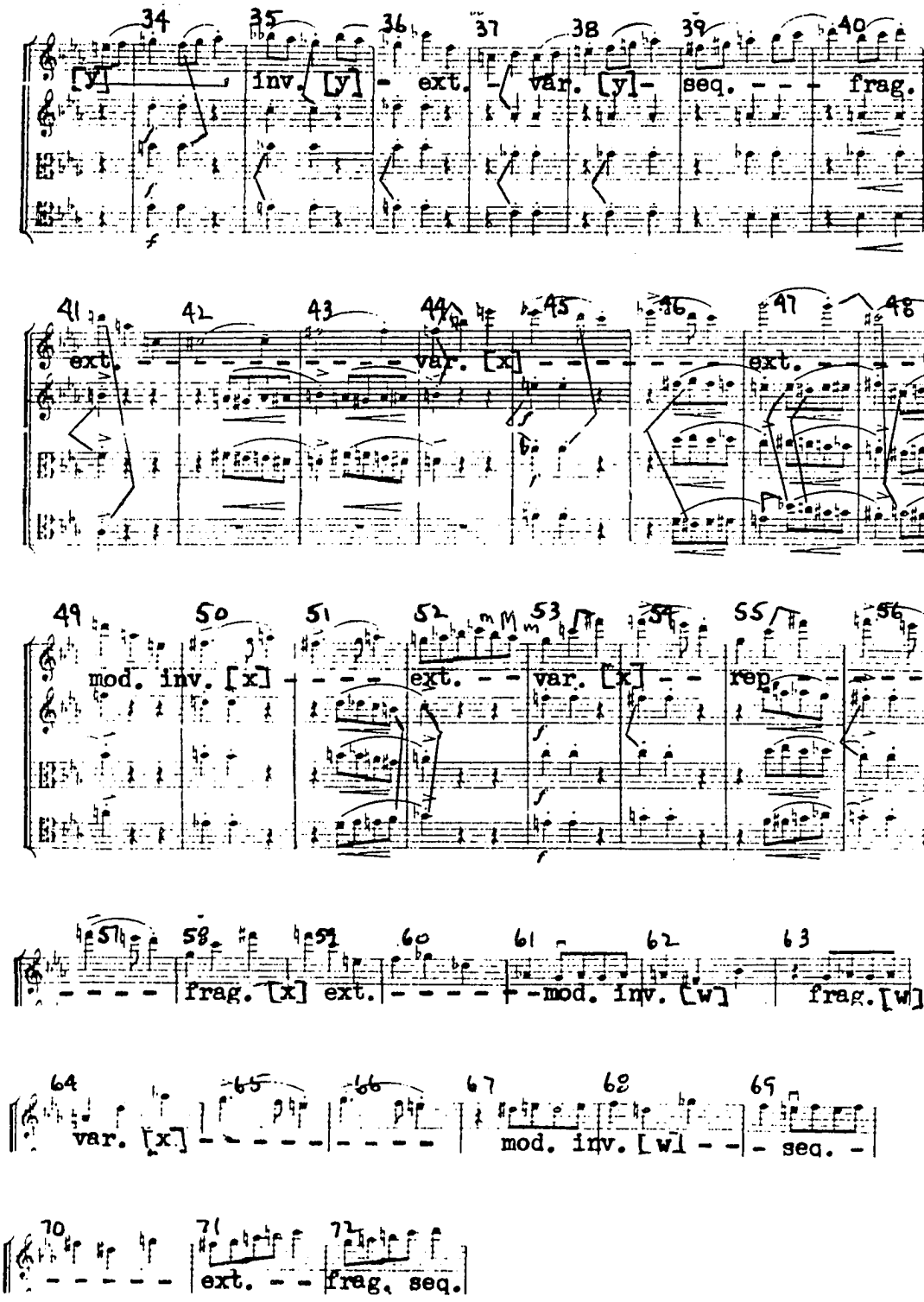
Mvt. 5 (m. 7-9)



[x]

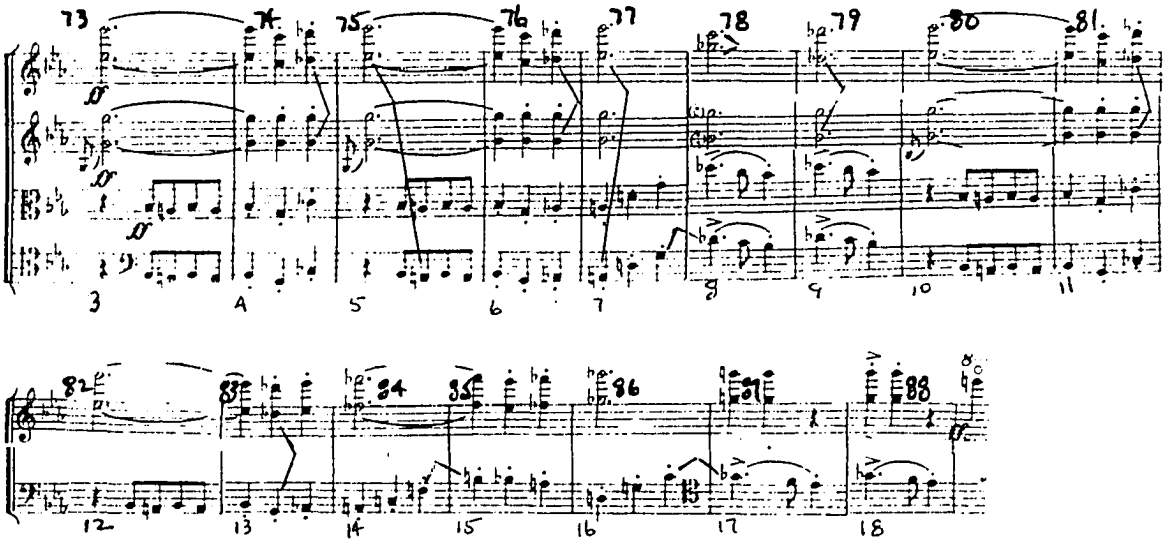
The characteristic sound of motive [x] has been thoroughly prepared by the preceding excerpts.

THEME Ib


34 35 36 37 38 39 40
[y] inv. [y] - ext. - var. [y] - seq. - - - frag.
41 42 43 44 45 46 47 48
ext. - - - - - - - - - - - var. [x] - - - - - - - - ext. - - - - - -
49 50 51 52 53 54 55 56
mod. inv. [x] - - - - - - ext. - - var. [x] - - rep. - - - - - -
57 58 59 60 61 62 63
- - - - - frag. [x] ext. - - - - - - - mod. inv. [w] frag. [w]
64 65 66 67 68 69
var. [x] - - - - - - - - - - - - mod. inv. [w] - - - seq. -
70 71 72
- - - - - - - ext. - - frag. seq.

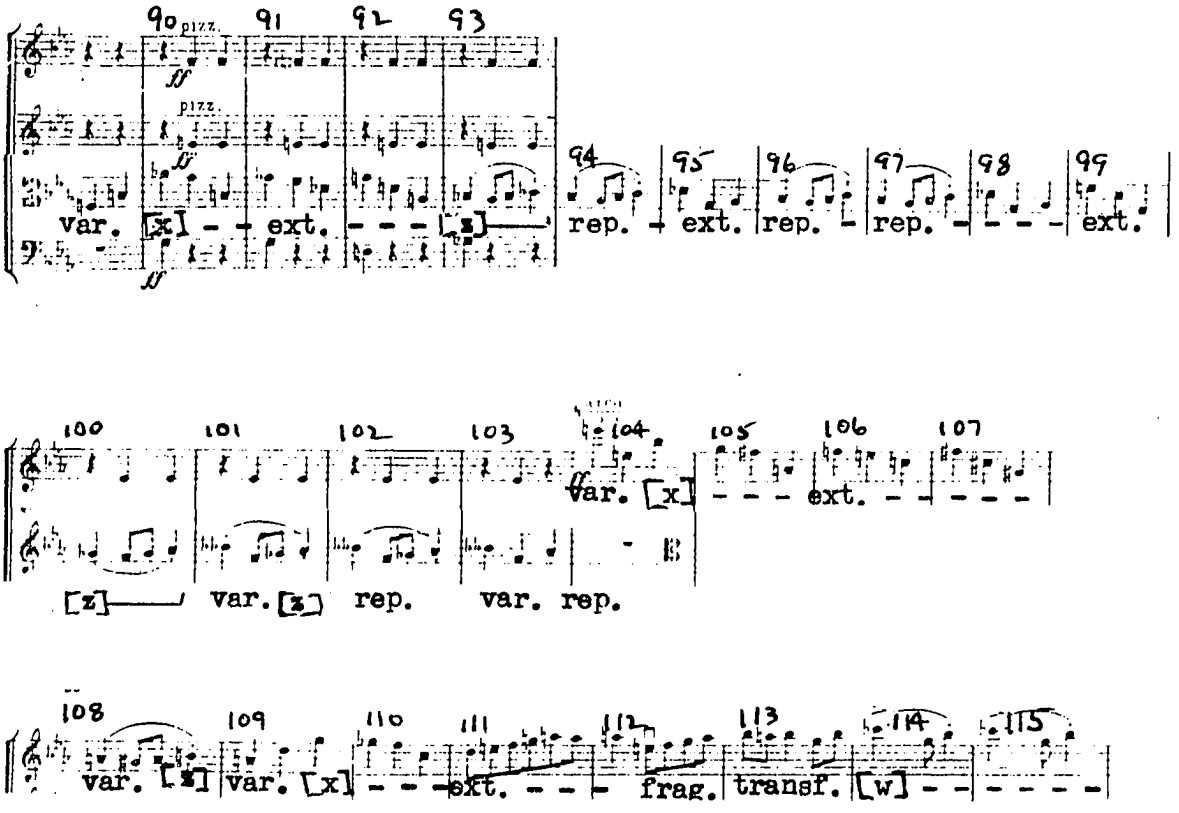
As shown on the line score theme Ib begins with the characteristic ♩♩ ♩ rhythm of motive [y]. However, the bulk of the linear material of this departure consists of exploitation of the rhythm of motive [w] and variation of the contour of [x] from theme Ia which are attended by the staccato quarter note accompaniment of theme Ib. Due to this combination of ideas from themes Ia and Ib the tritone influence is more prominent here than it was in theme Ia.

THEME Ia'



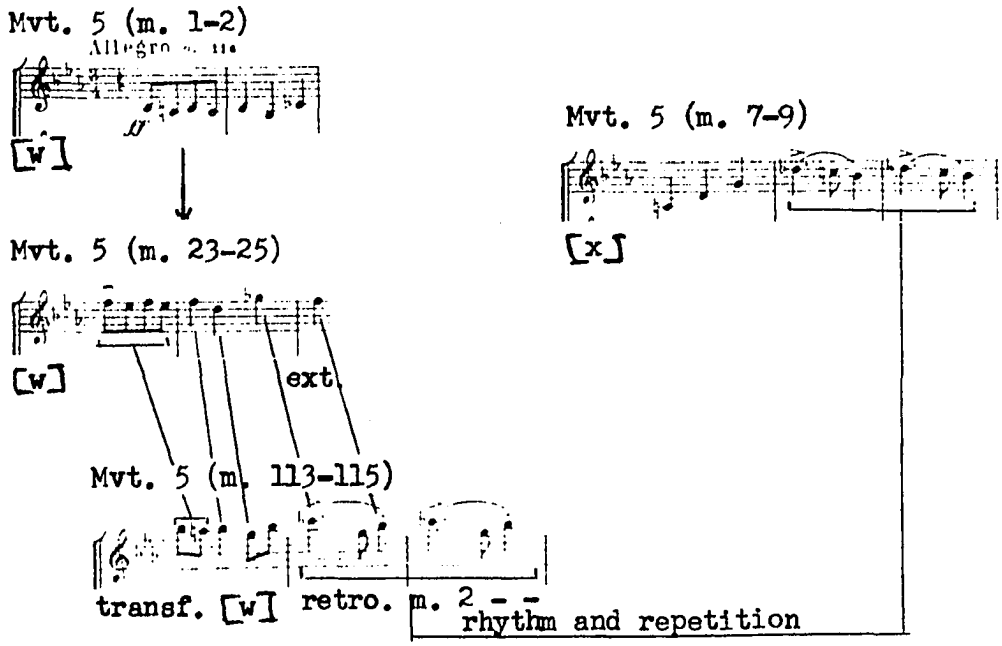
Although the restatement of theme Ia at measures 73-89 contains no new material, a change of texture gives the original material a quite different sound. Measures 3-18 of the first violin line are heard here in the viola and cello; the g pedal and double stops of measures 3-18 of the viola and cello are presented here in varied form by the first and second violin. A close examination of the line score shows a use of the same alternating pattern in both versions of theme Ia: e^{b}-f^{b}-g^{b}-g-(a-b^{b})-c-d^{b} (see theme Ia, p. 246).

THEME Ic

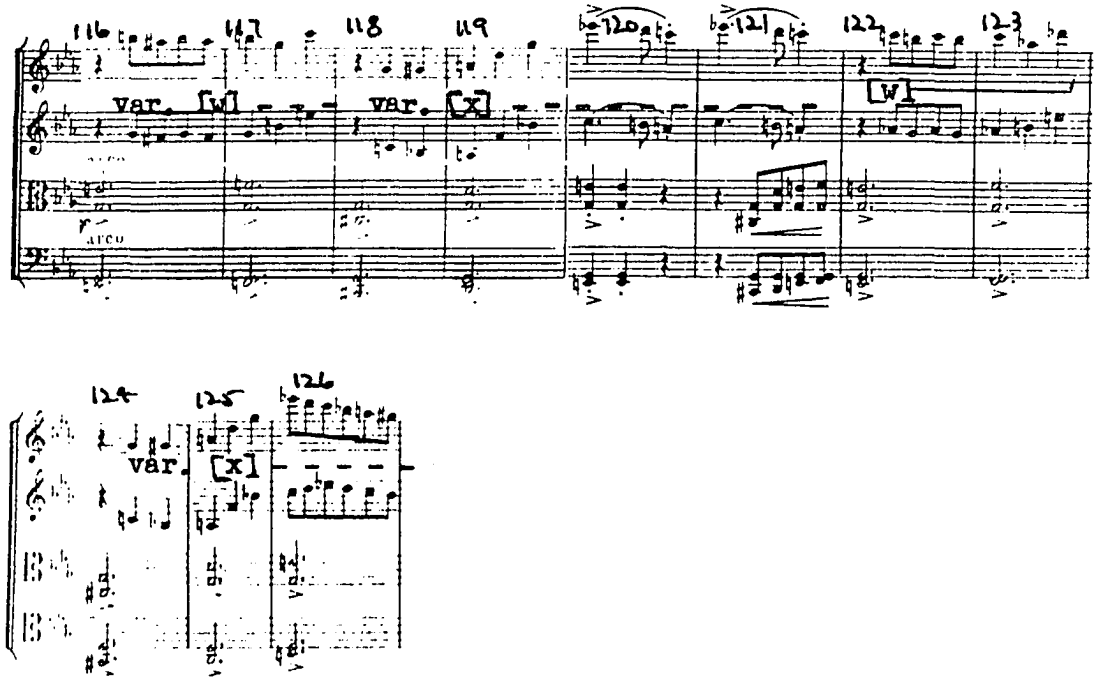


Theme Ic is constructed in a manner which closely parallels the techniques observed in theme Ib: exploitation of varied recurrences of the contour of motive [x] attended by the staccato quarter note accompaniment (now presented pizzicato) of theme Ib. Although the rhythm and contour of motive [z] are similar to a fragment of [y], the metric placement of [z] gives it a quite different sound. Example 6:24 shows the details of a transformation of motive [w] in the first violin at measures 113-115.

Ex. 6:24



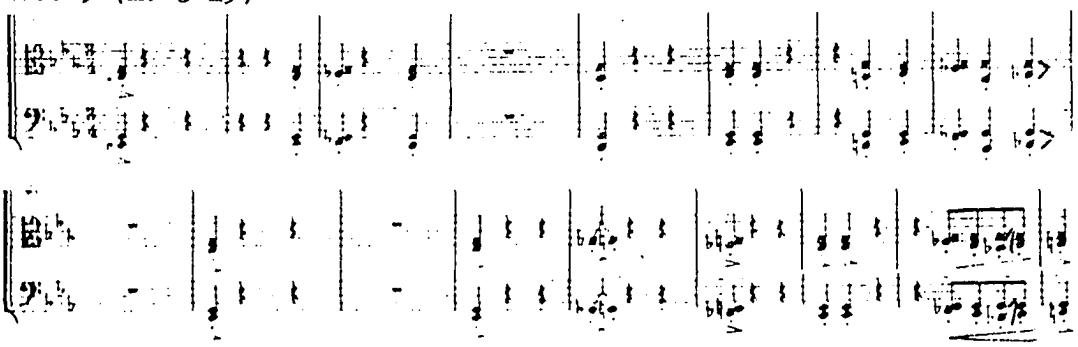
THEME Ia''



The details of this varied recurrence of theme Ia are shown on the line score. Measures 122-126 of this recurrence are a modified repeat of measures 116-120. As shown in example 6:25 the g pedal and double stops in the viola and cello are a second modification of the viola and cello lines at measures 3-19.

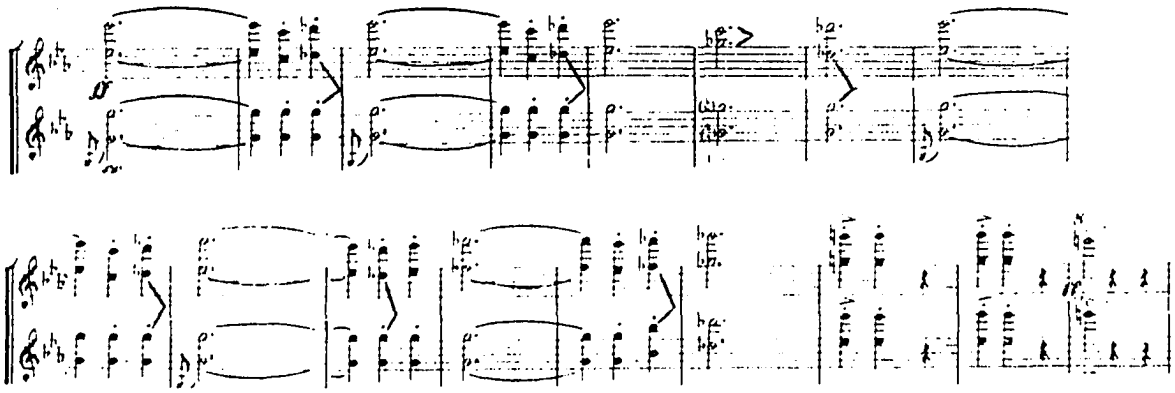
Ex. 6:25

Mvt. 5 (m. 3-19)



The accompaniment of theme Ia displays the tritone d^b-g and an alternating scalar pattern: c-d^b-e^b-f^b-g^b-g.

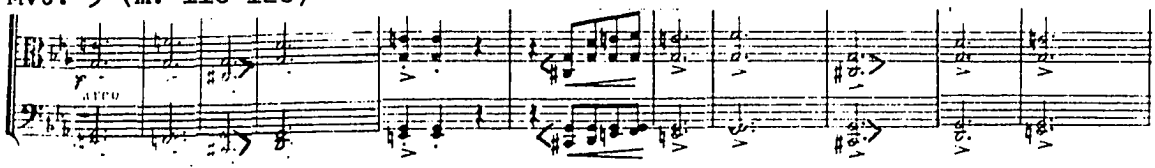
Mvt. 5 (m. 73-89)



The accompaniment of theme Ia' displays the tritones g-d^b, g^b-c, and b^b-f^b and an alternating scalar pattern: c-d^b-e^b-f^b-g^b-g.

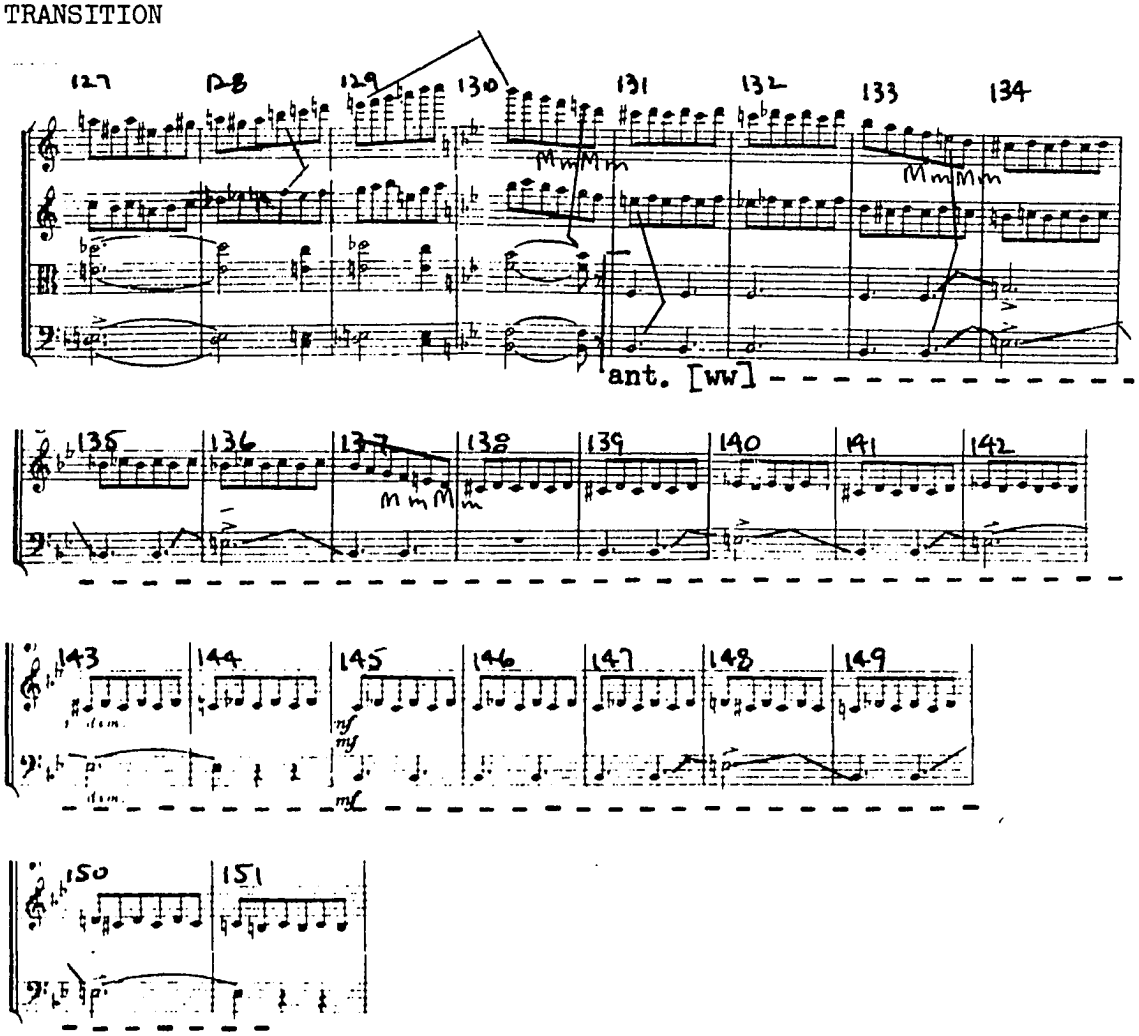
Ex. 6:25 continued

Mvt. 5 (m. 116-126)



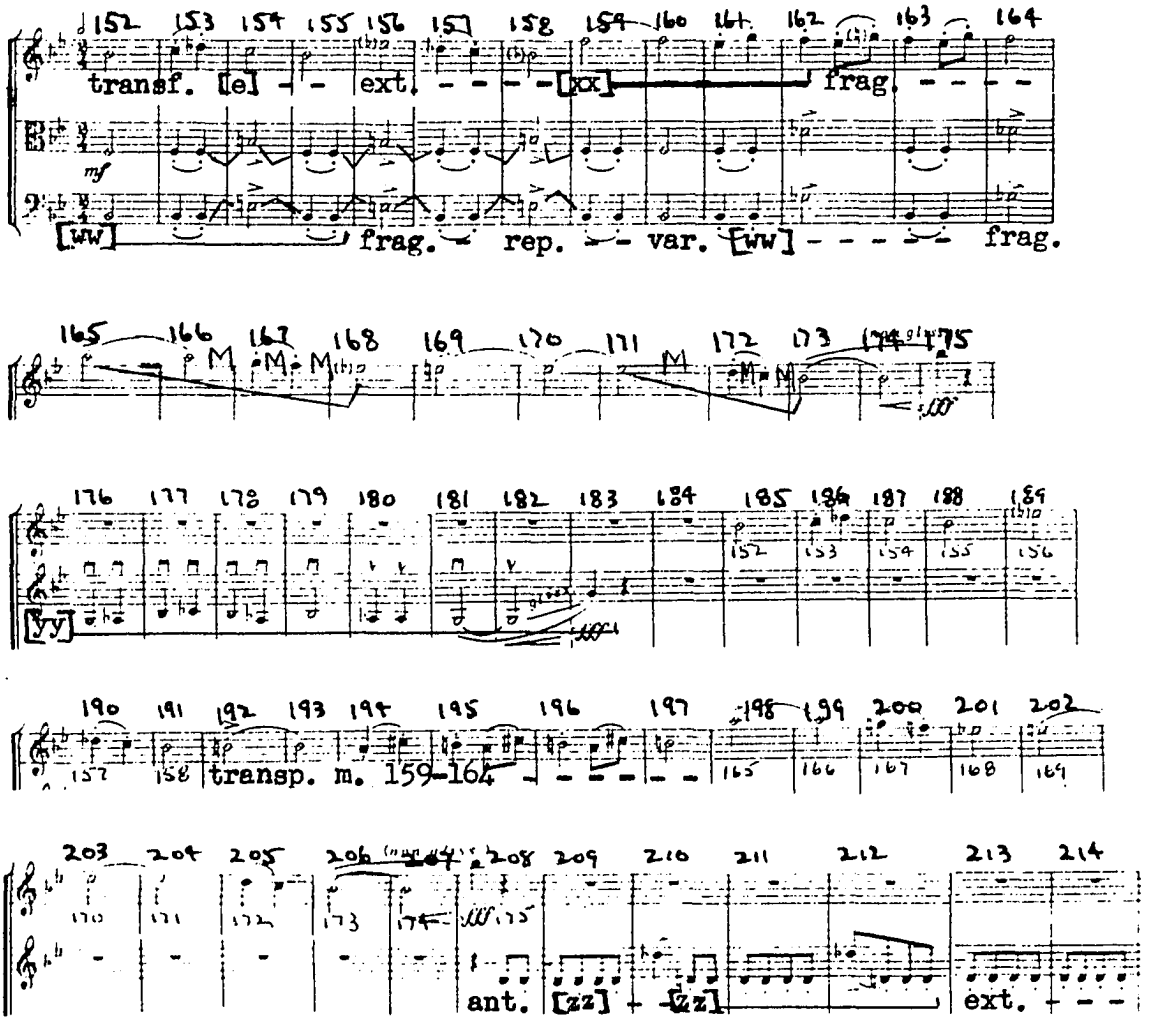
The accompaniment of theme Ia'' displays the tritone c#-g and an alternating scalar pattern: c#-d-e-f-g.

TRANSITION



An influence of the prominent written-out trill, the tritone, and several alternating patterns are shown on the line score. It is observed in retrospect that the viola and cello lines at measures 131-151 are anticipating the prominent b^b-e and f-b tritones of motive [ww].

THEME IIa

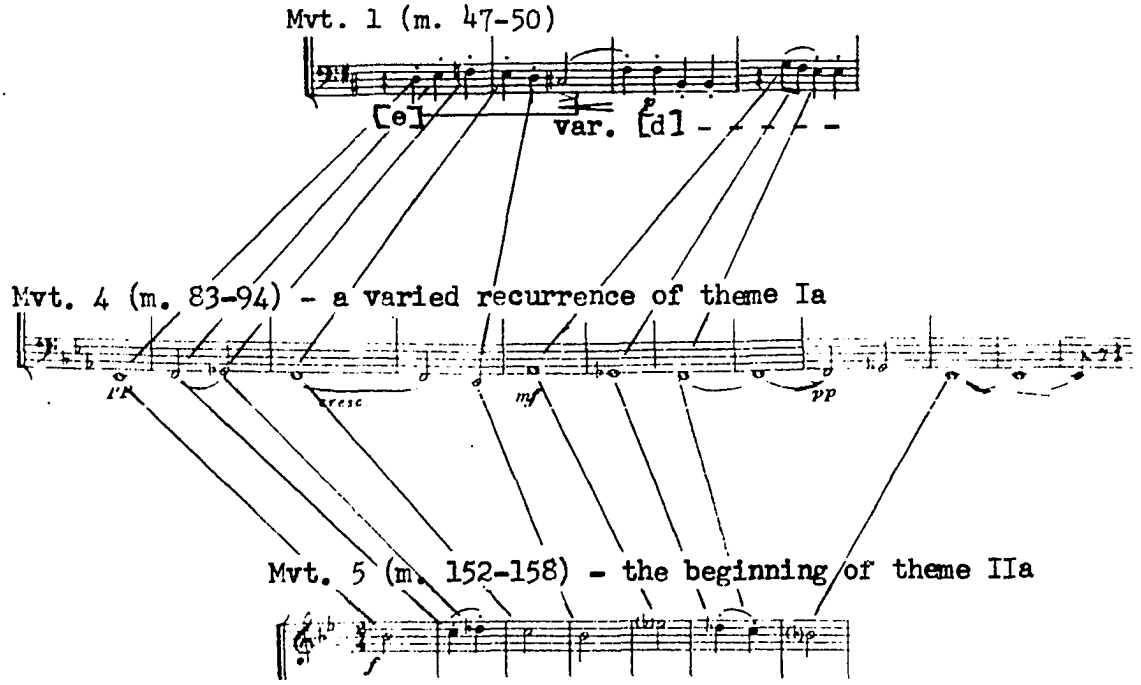


Due chiefly to the droning of motive [ww] the tritone is very strong in the first thirty-five measures of theme IIa; the

descending whole-tone influence noted on the line score also contributes to the aural prominence of the tritone. Motive [yy] in the second violin at measures 176-183 is a member of the family of motives which show an influence of alternating scalar patterns.

The heredity of the first violin contour at measures 152-158 is traced in example 6:26.

Ex. 6:26

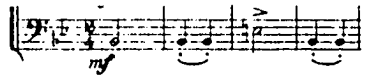


The first seven measures of theme IIa of movement five are a transformation of measures 83-92 of movement four which in turn descends from measures 47-50 of movement one.

As shown in example 6:27 motive [zz] in the second violin at measures 208-214 emerges out of [ww] and may be considered a variation of that motive.

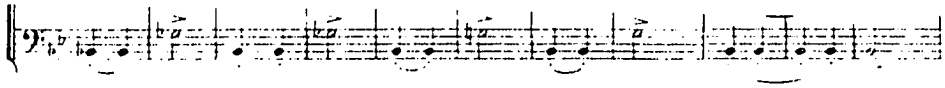
Ex. 6:27

Mvt. 5 (m. 152-155)



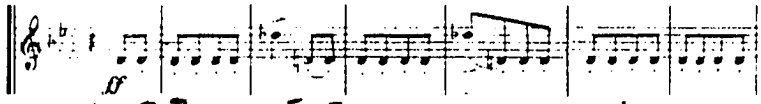
[ww]

Mvt. 5 (m. 198-207)

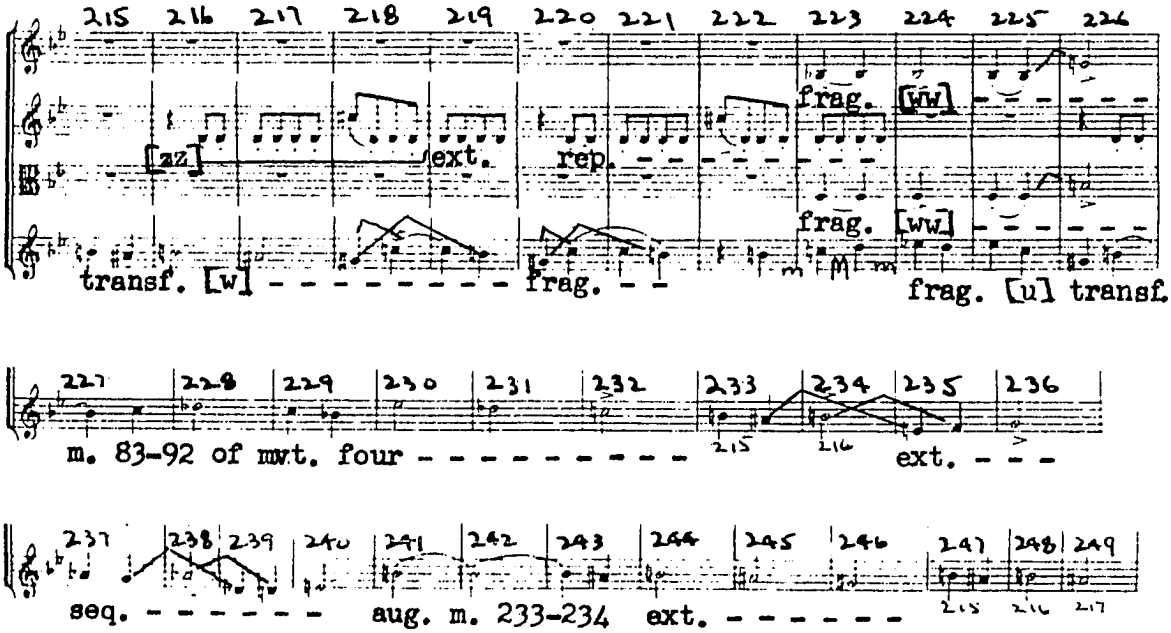


variation of [ww]

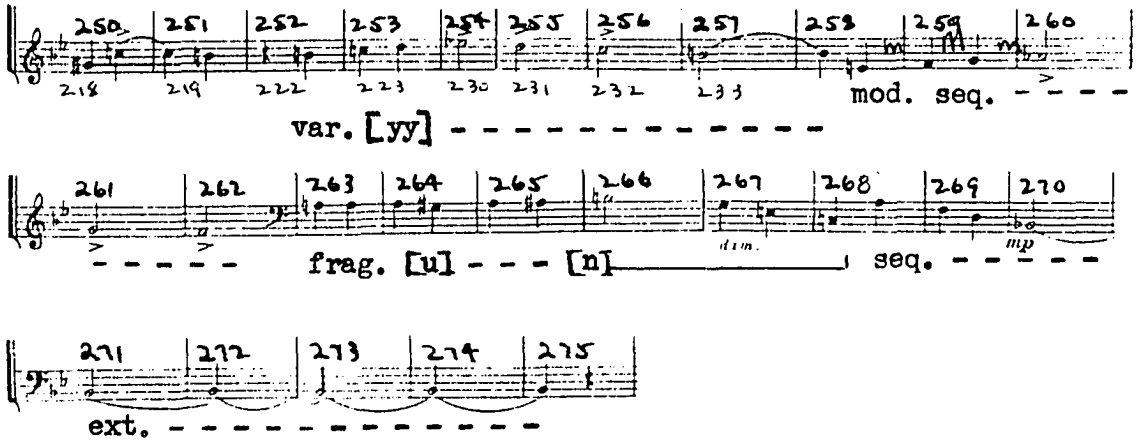
Mvt. 5 (m. 208-214)



THEME IIb



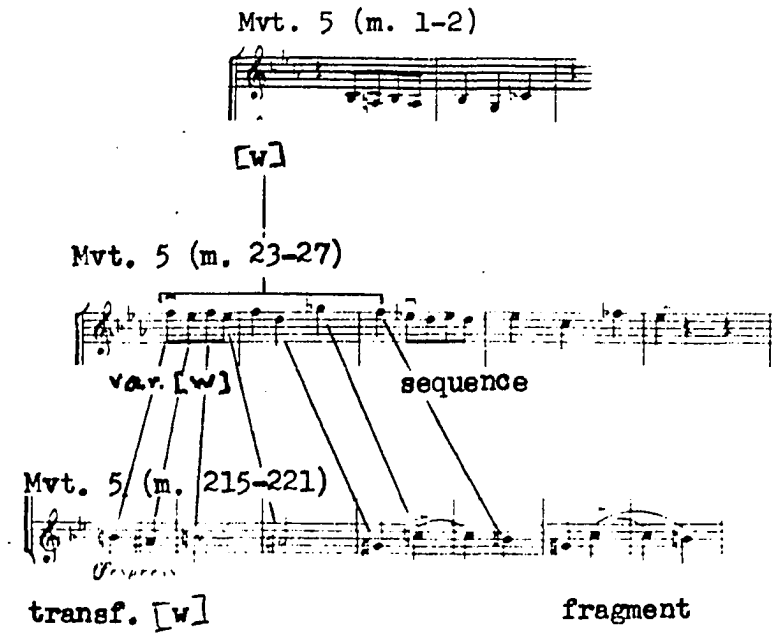
THEME IIb continued



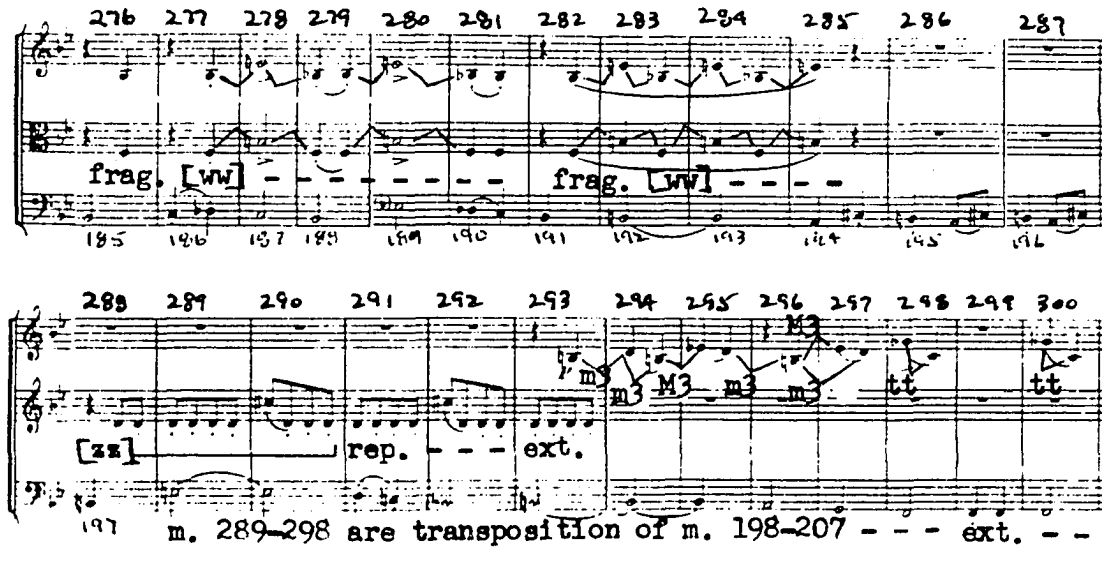
The first and second violin and viola reiterate [ww] and [zz] throughout theme IIb while the cello states the primary melodic material. Due to the many repeated notes of motive [ww] and [zz] and the continuous repetition of these motives throughout thematic area II, they are heard as a modification of the prominent pedal tones of this quartet. The repetition of [ww] continues to emphasize the tritones f-b and b^b-e from theme IIa. Also to be observed on the line score are the prominent alternating scalar patterns of motive [yy] and its variants.

As detailed in example 6:28 the first seven measures of theme IIb are a transformation of motive [w] accomplished by metric and rhythmic change and modified inversion of its second fragment.

Ex. 6:28

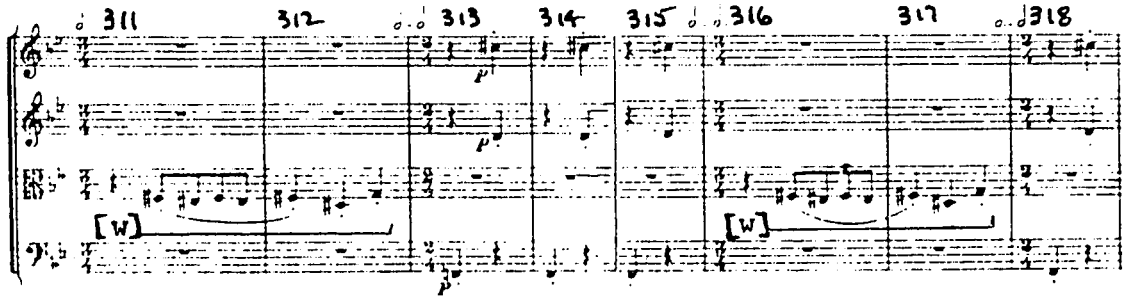


THEME IIa



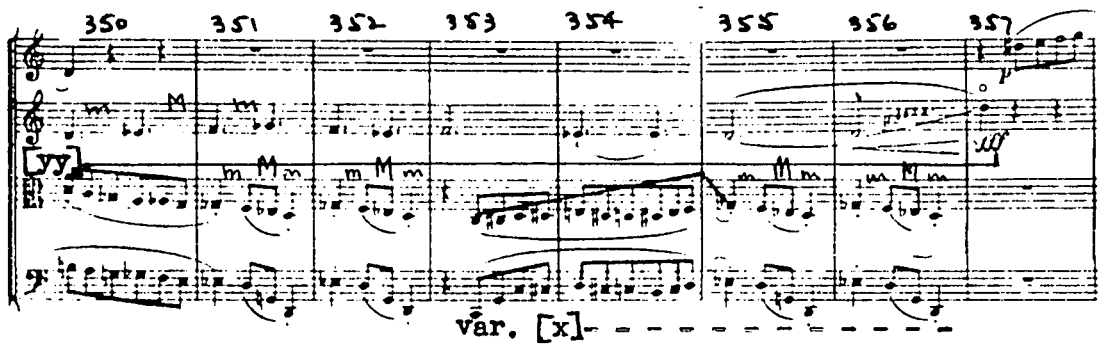
As shown on the line score this recurrence of theme IIa consists primarily of measures 185-207 of the original statement with a short extension which functions as codetta. In retrospect it is noted that the prominent m3/M3 at measures 293-297 in the first violin is anticipating the return of motive [w] as the first aural stimulus of the development section which begins at measure 311.

DEVELOPMENT - the initial measures of section one



Section one (m. 311-349) of the development manipulates motives [w] and [x]; no new techniques of motivic manipulation were observed. The most prominent sounds are repeated note pedals and motive [w] and its numerous variants.

DEVELOPMENT - the initial measures of section two



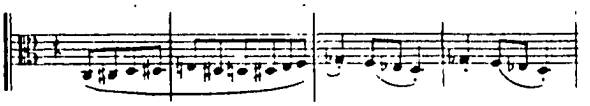
Section two (m. 350-414) of the development features four statements of motive [yy], one by each of the four instruments in

order: second violin, cello, viola, and first violin. There is a single prominent tritone in this section. The heredity of this tritone is shown in example 6:29.

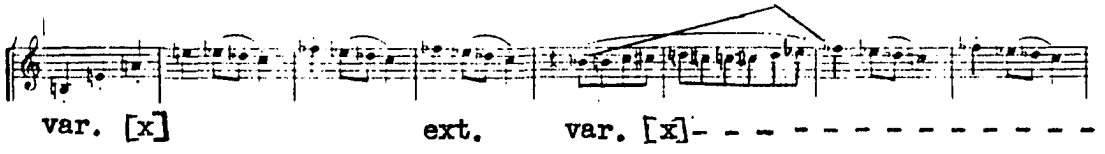
Ex. 6:29

Mvt. 5 (m. 7-9)

Mvt. 5 (m. 353-356)



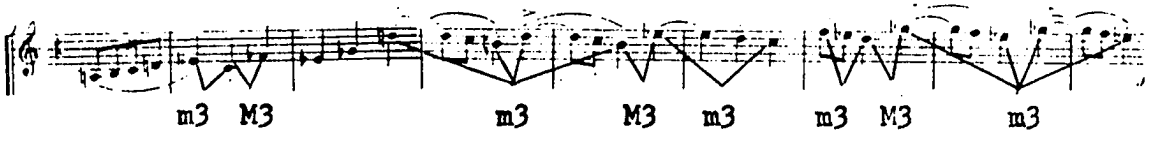
Mvt. 5 (m. 369-376)



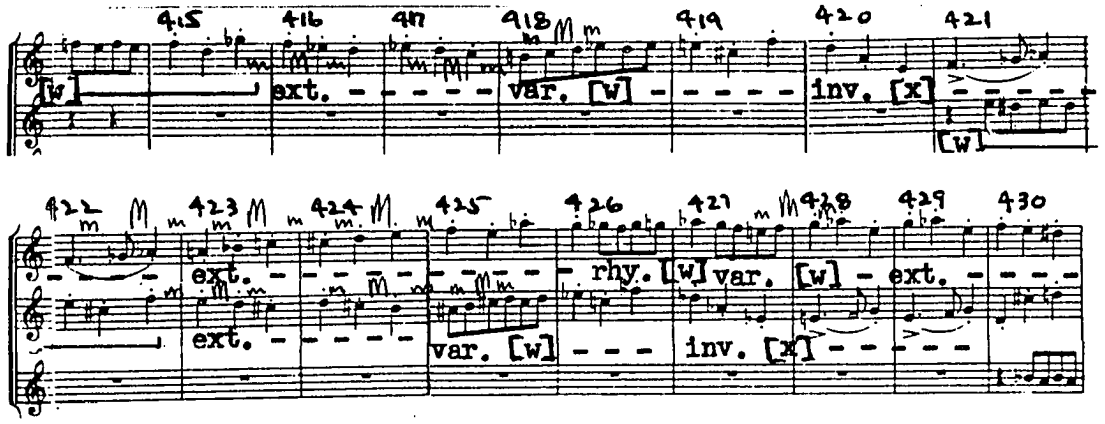
Due to the attention given to motive [yy] the influence of alternating scalar patterns is quite prominent in section two. As shown in example 6:30 an increase in prominence is also accorded to the m3/M3 fragment of motive [w].

Ex. 6:30

Mvt. 5 (m. 377-385)



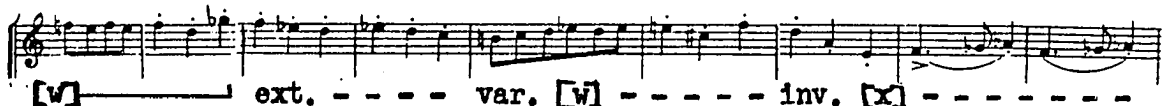
DEVELOPMENT - the initial measures of section three



The third section of the development is a fugue whose theme is constructed from motives [w] and [x]. The fugue theme and a partial inversion are shown in example 6:31.

Ex. 6:31

Mvt. 5 (m. 414-422) - fugue theme



See $[x]_2$
Ex. 6:23

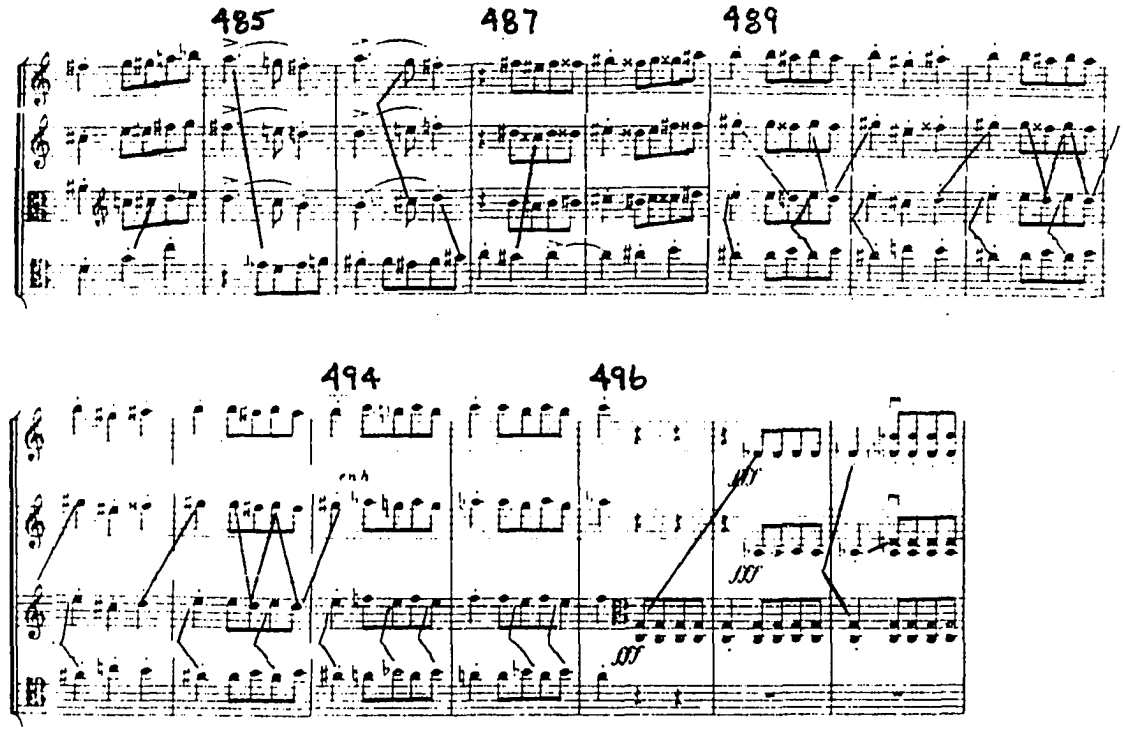
Mvt. 5 (m. 445-453)

This partial inversion of the fugue theme brings the first section of the fugue to a close and becomes the basis for a second exposition which begins at measure 453.

Example 6:32 shows the closing measures of the fugue where the tritone boldly reasserts itself against the alternating scalar influence.

Ex. 6:32

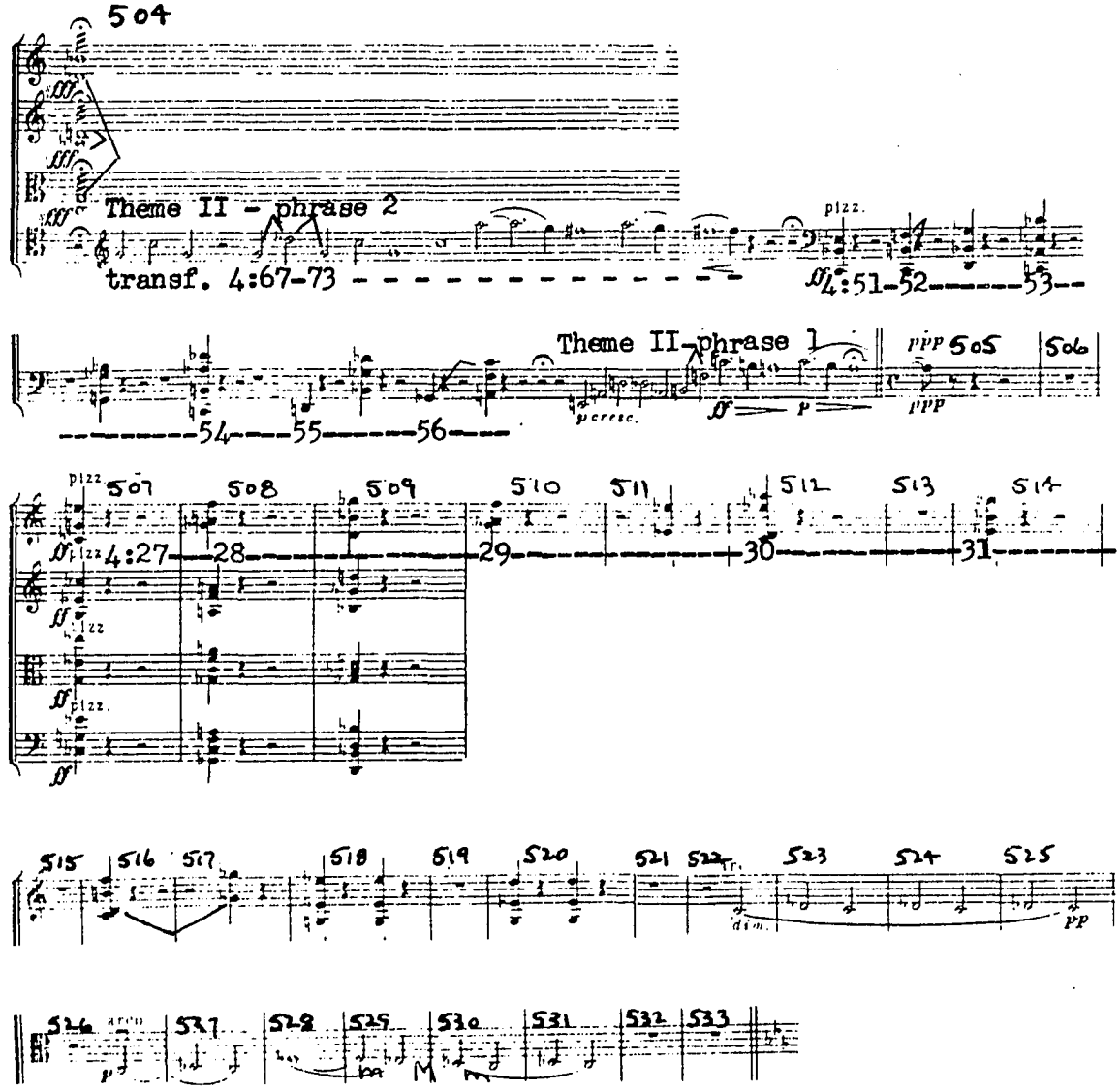
Mvt. 5 (m. 484-498)



In addition to the prominent tritones involving all instruments as shown on the line score, the following influences of alternating scalar patterns are noted:

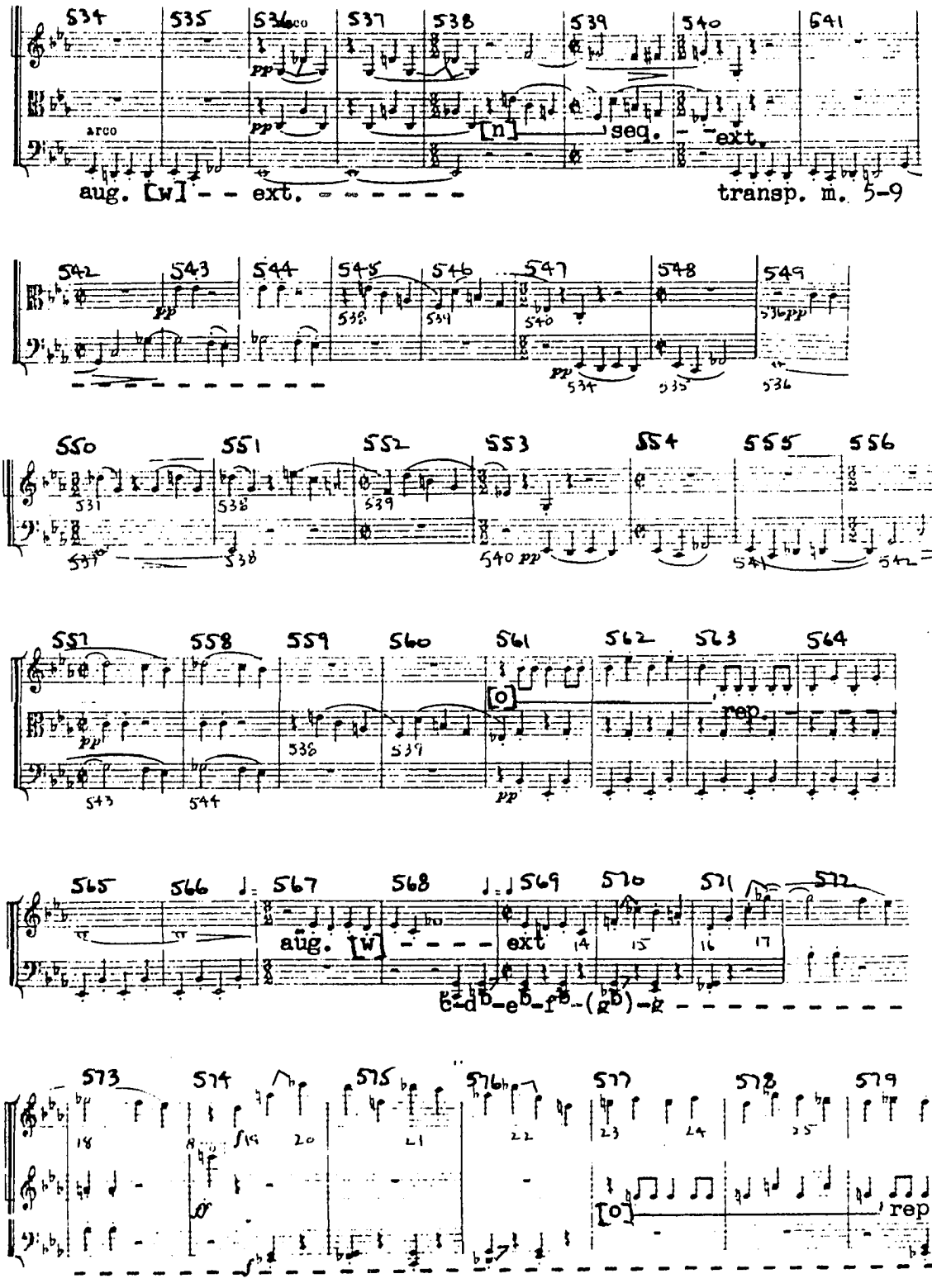
1. m. 485-487 - the cello: d-e^{b}-f-f#-g#-a.
2. m. 489-496 - the first and second violin and viola: all pitches except the c in the first violin (m. 494-496) belong to an alternating pattern constructed from the lowest pitch: c#-d-e-f-g-a^{b}-b^{b}-b.
3. m. 487-496 - the first and second violin double at the interval of a minor third which expands to a major third at measure 494. The expansion of a minor third to a major third is a prominent characteristic of the second measure of motive [w] as well as of the alternating pattern.
4. m. 494-496 - all instruments emphasize a dichotomy of f major versus f minor in the resultant vertical structures.

DEVELOPMENT - section four

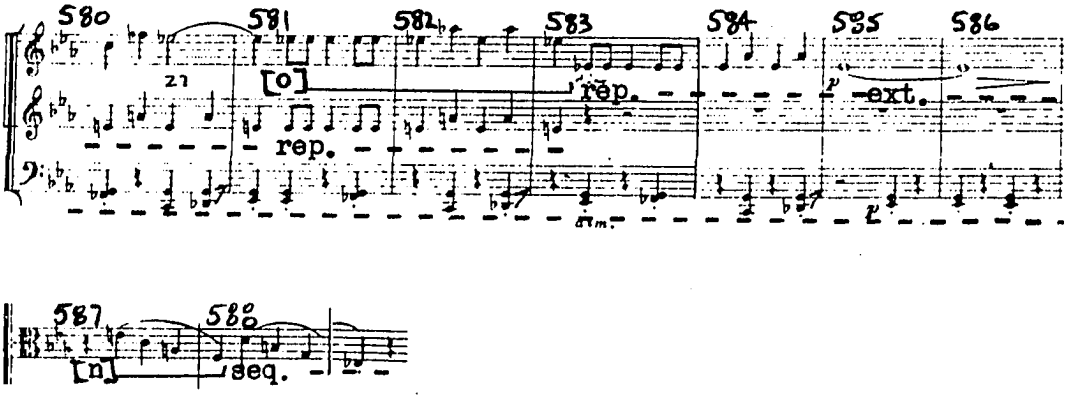


Section four of the development presents a summation of the prominent sounds of movement four. The original measure numbers of recurring material are shown on the line score.

THEME Ia''

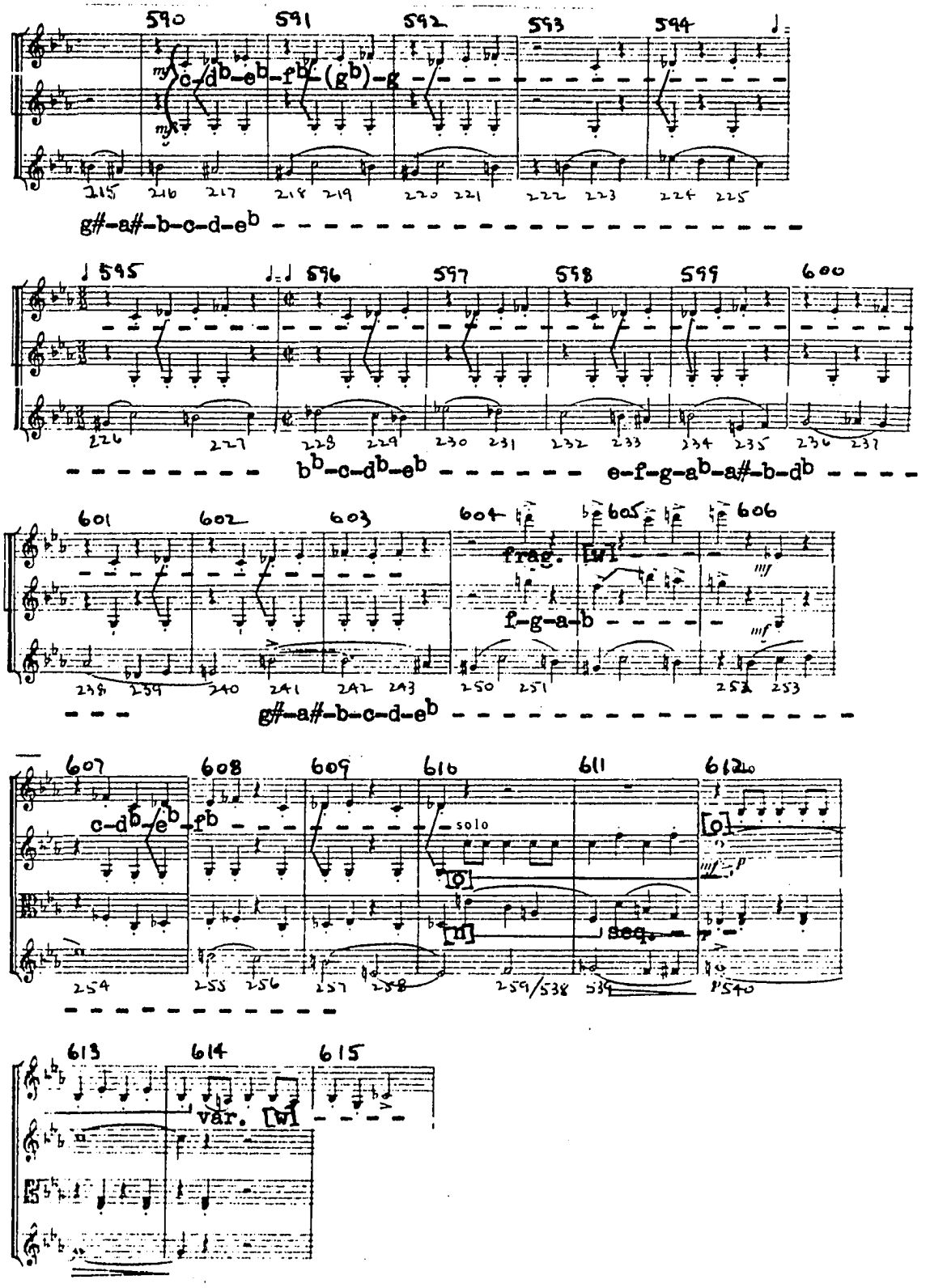

534 535 536 537 538 539 540 541
arco
pp
[n]
seq.
ext.
aug. [w] - - ext. - - - - - -
transp. m. 5-9
542 543 544 545 546 547 548 549
pp
538 539 540 534 535 536
550 551 552 553 554 555 556
531 538 539 540 pp 541 542
557 558 559 560 561 562 563 564
[o]
rep.
538 539 543 544 pp
565 566 567 568 569 570 571 572
aug. [w] - - - - ext
14 15 16 17
c-d-e-f-(g)-g
573 574 575 576 577 578 579
18 19 20 21 22 23 24 25 26
[o]
rep.

THEME Ia'' continued



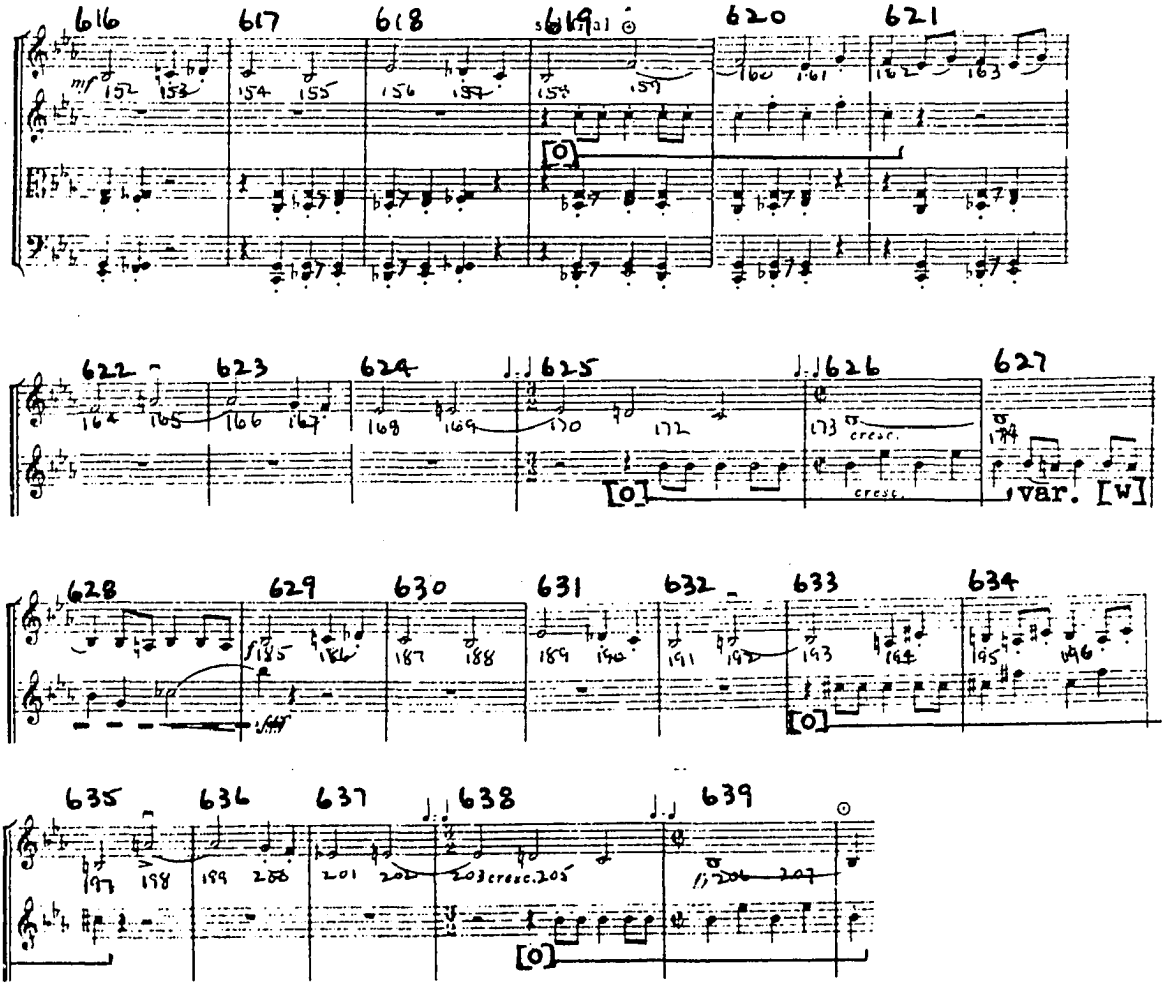
The techniques of motivic manipulation and the original measure numbers of recurring linear material displayed by this varied recurrence of theme Ia are shown on the line score. Like the recapitulation of thematic area I of movement one this return of the characteristic elements of theme Ia of this movement has a quite different sound. Had the climactic rush and excitement of the fugue not been interrupted by the interpolation of the solemn mood of movement four, this recapitulation would undoubtedly have begun much differently than it does. The thematic materials from movement four which are used to construct the final section of the development would make an immediate return to the character of the opening measures of this movement seem quite abrupt. Thus the recapitulation of theme Ia (m. 534-589) is conceived as a gradual gathering of momentum; the original character of the exposition is not fully achieved until the return of theme IIb at measure 589 in the cello. In the sense that this study has considered a change of character to be a primary goal of the process of transformation, this recurrence of theme Ia may be catagorized as a transformation.

THEME IIb'


590 591 592 593 594
c-d♭-e♭-f♭-(g♭)-g
215 216 217 218 219 220 221 222 223 224 225
g#-a#-b-c-d-e♭
595 596 597 598 599 600
226 227 228 229 230 231 232 233 234 235 236 237
b♭-c-d♭-e♭
e-f-g-a♭-a#-b-d♭
601 602 603 604 605 606
frag. [w]
f-g-a-b
238 239 240 241 242 243 250 251 252 253
g#-a#-b-c-d-e♭
607 608 609 610 611 612
c-d♭-e♭-f♭
solo
[o]
[n]
seq.
254 255 256 257 258 259/538 539 PS40
613 614 615
var. [w]

As shown on the line score this varied recurrence of theme IIb consists of the prominent linear material of measures 215-259 with measures 244-249 omitted. An influence of the alternating scale is strong though subtle; portions of all three of the possible alternating scales occur within measures 589-615 as documented on the line score.

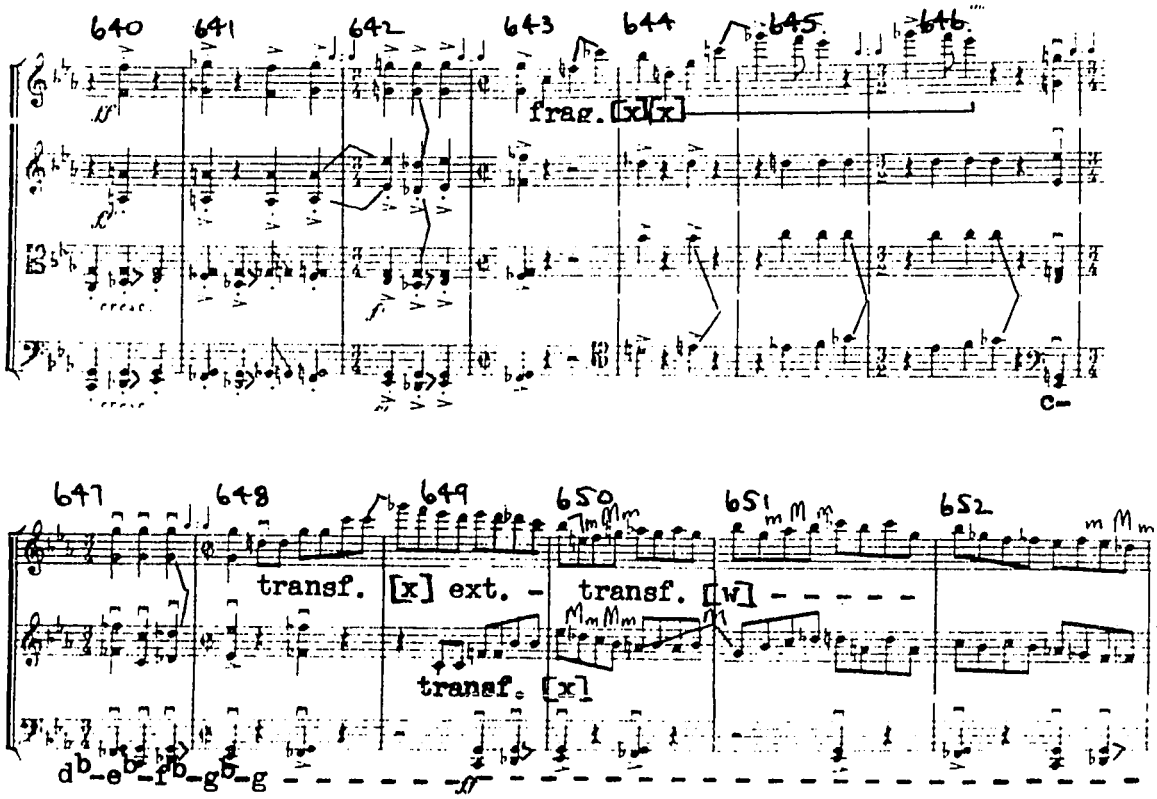
THEME IIa'



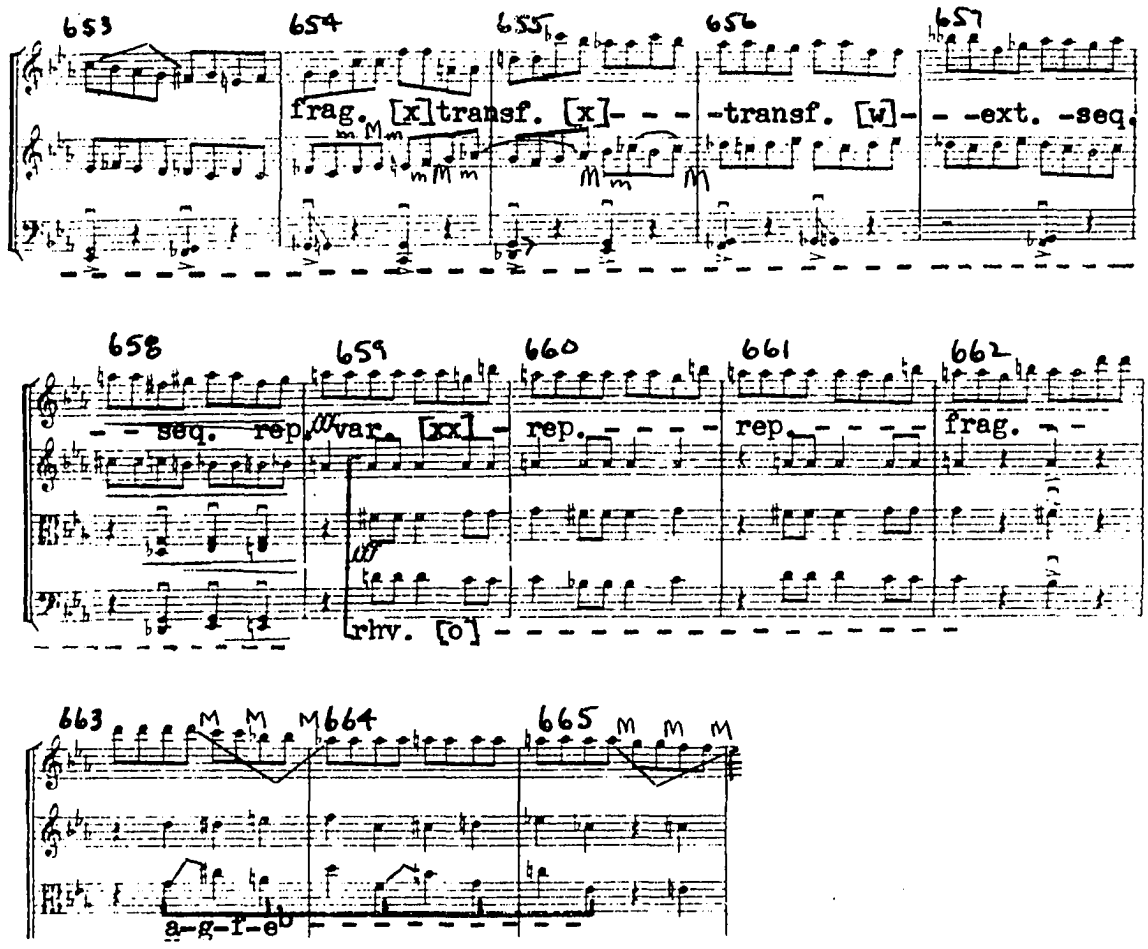
This varied recurrence of theme IIa consists of the linear material of measures 152-201 of the original statement with measures

175-184 omitted. At measures 616-639 the cello and viola double-stops subscribe to the alternating pattern c-d^b-e^b-f^b-g^b-g; the original source of these vertical structures is at measures 1-19 in the viola and cello (see also Ex. 6:25, pp. 256-257). The primary melodic material in the first violin displays the same alternating and whole tone patterns observed in the original statement. Motive [o] (measures 619-621 in the second violin) was not associated with the original statement of theme IIa.

CODA - section one

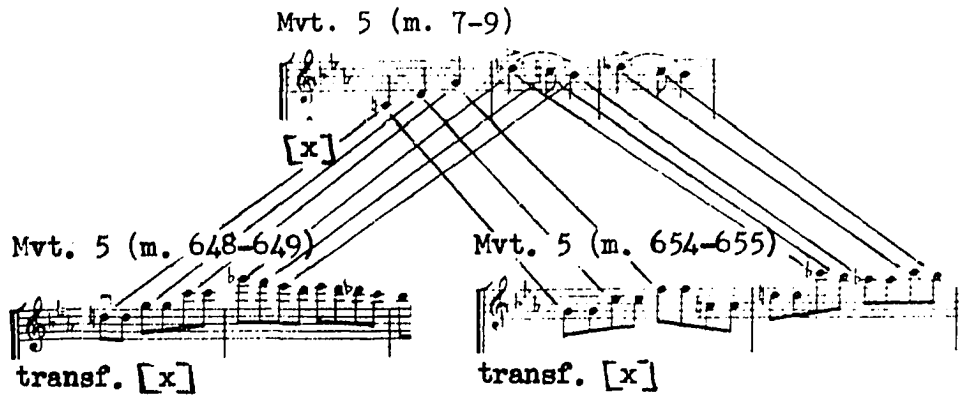


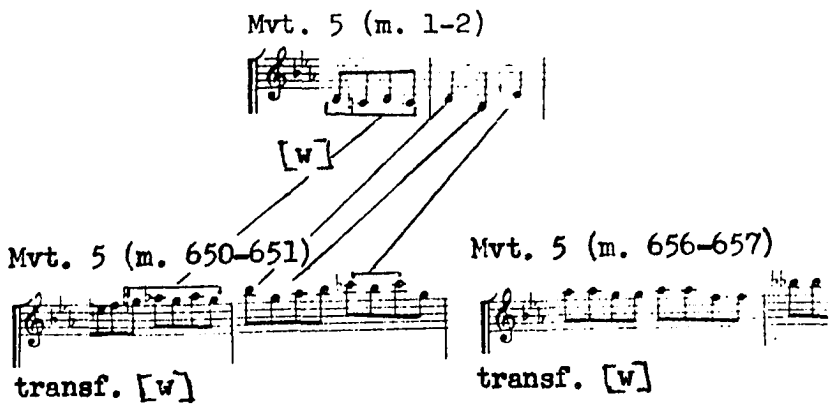
CODA - section one continued



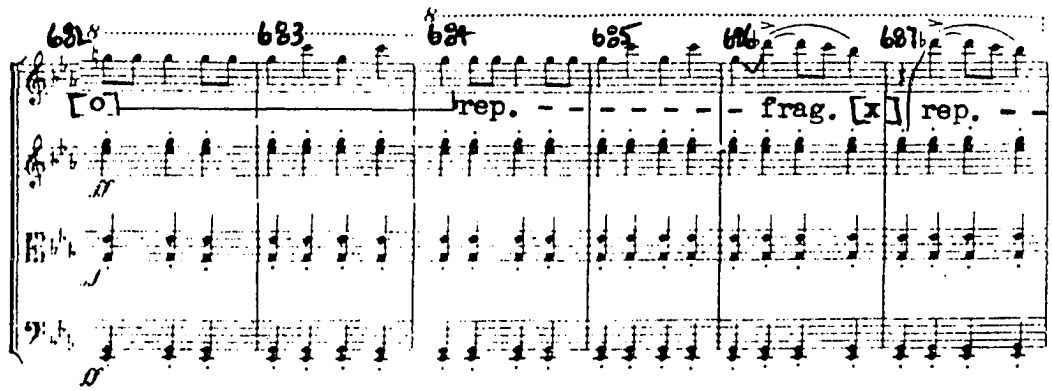
The details of motivic manipulation in section one of the coda are shown on the line score. A g repeated pedal is prominent in both the viola and cello at measures 640-643 and in the cello at measures 646-658 while tritones and alternating scalar patterns are found in all voices. Motives [w], [x], and [xx] are the most prominent sounds of this section. Measures 640-665 are given a modified repeat at measures 666-679 where the viola and cello exchange lines with the first and second violin. The transformations of motives [x] and [w] at measures 648-651 and 654-657 are detailed in example 6:33.

Ex. 6:33

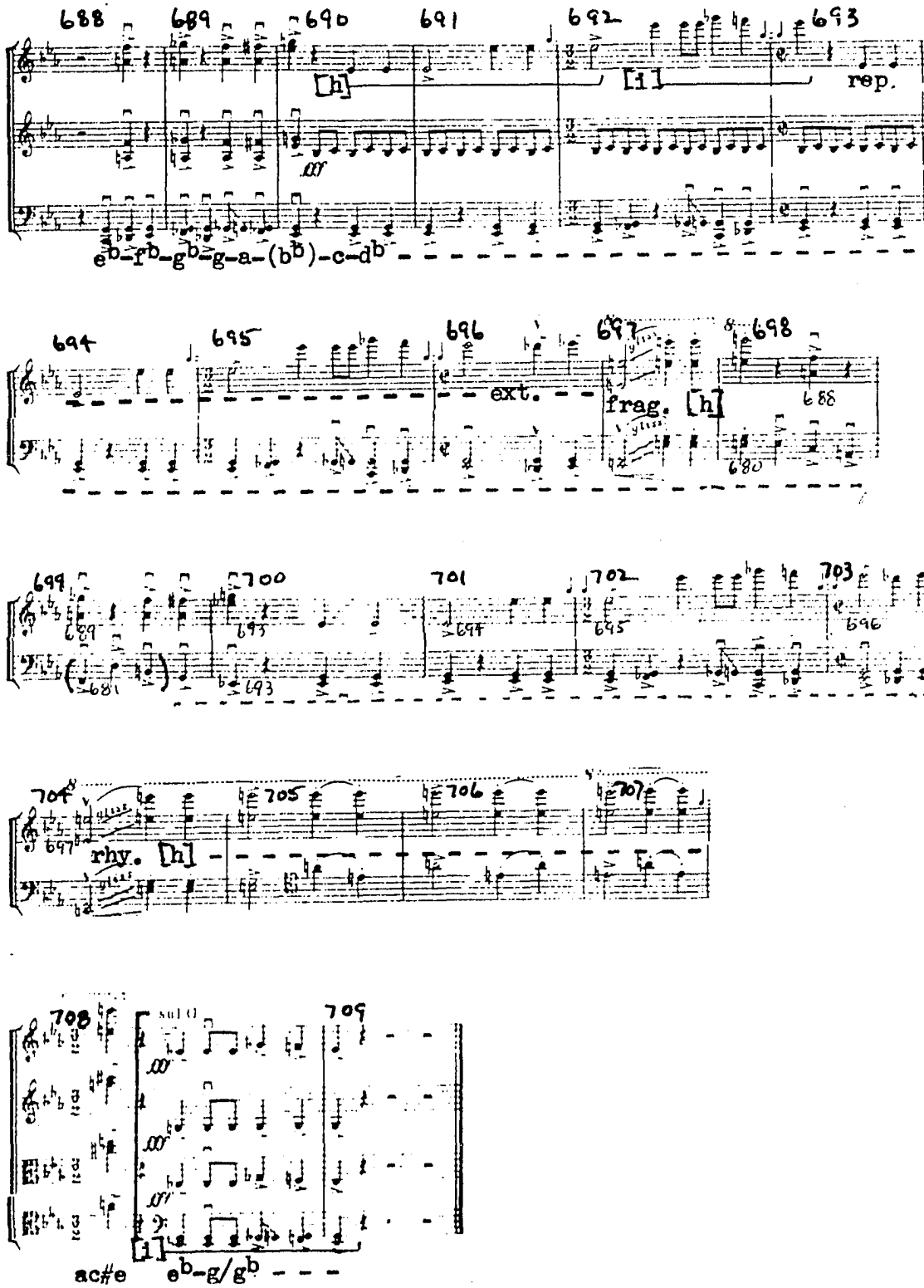




CODA - section two



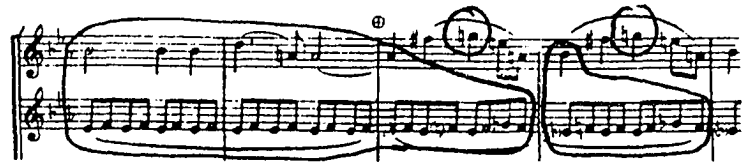
CODA - section two continued



Repeated note pedals and written-out trills are readily observed on the line score as are alternating scaler patterns and tritones. The importance of the tritone as a unifying factor is emphasized by the tritone root relationship of the final cadence: a-c#-e and e^b-g^b/g-(b^b). Also emphasized by this cadence is the dichotomy of $\underline{e^b}$ major versus $\underline{e^b}$ minor. This M/m dichotomy is a prominent characteristic of alternating scalar patterns and has been observed a number of times in this quartet. As shown in example 6:34 this dichotomy of major versus minor mode was among the subtle aural stimuli of the initial measures of movement one.

Ex. 6:34

Mvt. 1 (m. 6-10)



Summary

All three of the prominent aural events which were noted in theme Ia of movement one and which have been observed as unifying factors throughout this quartet are present in movement five in approximately the same proportion as movement one. The following observations were made concerning the various forms of pedal tones:

1. Except for theme Ic, thematic area I features a $\underline{g}$ repeated note pedal.

2. Due to the constant droning of motives [ww] and/or [zz] the effect of from two to six repeated note pedals is heard throughout thematic area II, sometimes in simultaneity and sometimes in alternation.

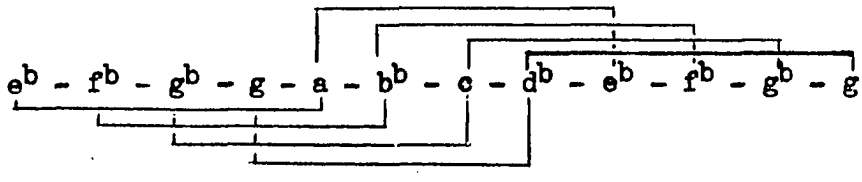
3. Repeated note pedal tones are prominent in sections one and three of the development.

4. A g repeated note pedal tone is prominent throughout most of the recapitulation of thematic areas I and II and the coda section.

The tritone which is intermittently prominent throughout thematic area I increases in intensity during the transition to thematic area II and is very strong in the accompaniment to themes IIa and IIb and in the several whole-tone patterns of theme IIa itself. Except for the closing measures of section three the tritone is not particularly strong in the development. In spite of recurrence of motive [x], tritone influence in the recapitulation is weak until the recurrence of theme IIa (m. 616-640).

In the coda the juxtaposition of the tritone with aurally prominent alternating patterns suggests that the composer may be calling attention to the fact that the prominent tritones of this quartet descend directly from the alternating scale. As detailed in example 6:35 any given pitch of an alternating scale forms a tritone with the fourth pitch above and below itself.

Ex. 6:35



The triad members of the vertical structures of the final cadence emphasize the tritone: a - c# - e and e^b - g^b/g - (b^b). It is noted that the a-e^b root relationship of these structures is the same tritone which was observed as one of the prominent aural events of the opening measures of movement one. All pitches of both structures are accommodated within the alternating scale of example 6:35 above; the e^b shown as the first pitch in that example is the primary tonal center of this quartet.

In thematic area I the influence of alternating scalar patterns is confined almost exclusively to accompanimental voices; thus the patterns tend to be somewhat submerged and aurally less acute. Alternating patterns become slightly more prominent in theme Ia'' and the transition to thematic area II. In thematic area II the alternating patterns vie with whole-tone patterns for aural attention. Since tritones possess a degree of prominence in both alternating and whole tone patterns the droning tritones of motive [ww] serve as a common factor between the two patterns.

Alternating patterns are not prominent in section one of the development. In section two aural prominence of the alternating pattern is strong in motive [yy] and is intermittent in several of the accompanimental lines. Alternating patterns are one of the most prominent sounds of section three (fugue). The opening cello recitative of section four has an alternating scalar basis as do the first violin and viola lines which close the development.

In the recapitulation the influence of alternating patterns approximately parallels the observations made for the exposition. Alternating patterns in the coda section occur intermittently in the construction of accompanimental lines.

Summary of Unifying Factors Among Motives and Themes of the Ninth Quartet

During this investigation of the ninth quartet attention was directed on numerous occasions to the on-going influence of three prominent aural events of theme Ia of movement one: (1) the pedal tones in both sustained and written-out trill form, (2) the e^{b}-a tritone, and (3) the several alternating scalar patterns. Analysis has shown that pedal tones and tritones are much more aurally acute throughout this quartet than are alternating patterns.

Pedal tones were observed as prominent aural events of thematic areas I and II of movement one, the transition and theme B of movement two, the three thematic areas of movement three, thematic areas I and II of movement four, and the two thematic areas of movement five.

An emphasis upon the tritone is a characteristic of alternating scales. The alternating patterns of this quartet tend to keep a low profile; however, the tritone characteristic of these patterns is very prominent both horizontally and vertically. This aural prominence of the tritone makes a substantial contribution to the quite different sound here than that recalled in the two previous quartets. In the seventh

quartet prominent tritones were noted in theme IIa and the coda of movement one, and the coda of movement three; in the eighth quartet sporadic tritone influence was found in thematic area II of movement two, the transition of movement three, and the introduction and transition of movement four. In the ninth quartet the tritone influence initiated by theme Ia of movement one spreads to all five movements and touches all of their prominent themes. The tritone is especially prominent in themes Ia, IIb, and the coda of movement one; the transitions and theme B of movement two; themes Ia, IIa, and IIIb of movement three; theme Ib of movement four; and themes IIa, IIb, section three of the development, and the coda of movement five.

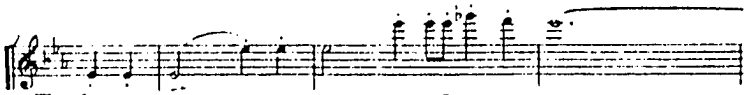
Whereas the alternating patterns of the seventh quartet are fairly audible and those of the eighth quartet are extremely audible, the alternating patterns of the ninth quartet are not particularly aurally acute. This is at least partially due to the fact that they occur primarily in subsidiary lines rather than in prominent motives and themes as they did in quartets seven and eight.

Of the thirty prominent motives identified in this quartet seventeen show readily identifiable influence of pedal tones, tritones, and/or alternating scalar patterns. These seventeen motives are shown in example 6:36.

Ex. 6:36

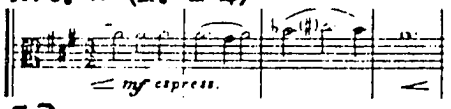
1. Motives which display pedal tone influence:

Mvt. 1 (m. 91-94)



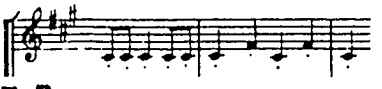
[h] [i]
suggests an $\underline{e^b}$ pedal

Mvt. 2 (m. 1-4)



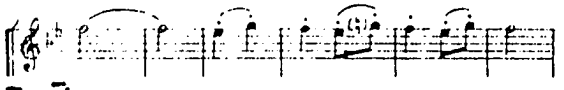
[j]
suggests an a pedal

Mvt. 3 (m. 16-18)



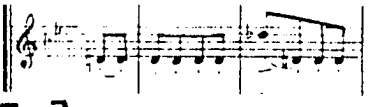
[o]
suggests a c# pedal

Mvt. 5 (m. 159-162)



[xx]
suggests an f pedal

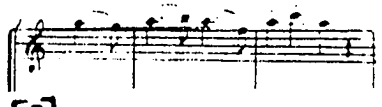
Mvt. 5 (m. 209-210)



[zz]
suggests a d pedal

2. Motives which show pedal tone and tritone influence:

Mvt. 3 (m. 144-146)



[s]
suggests an a pedal and
contains a b-f tritone

Mvt. 5 (m. 152-155)

[ww]
suggests a $\underline{b^b}$ pedal and
contains a $\underline{b^b}$-e tritone

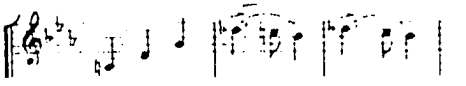
Ex. 6:36 continued

3. Motives which display a tritone:

Mvt. 2 (m. 6-8)

[k]
contains a g-c# tritone

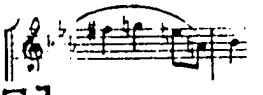
Mvt. 5 (m. 7-9)



[x]
contains a g-d^b tritone

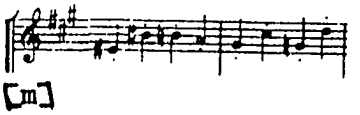
4. Motives which display tritone and alternating pattern influence:

Mvt. 1 (m. 8-9)



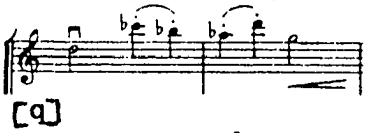
[b]
contains an e-b^b tritone
and is constructed from
the alternating pattern:
e-f#-g-a-b^b

Mvt. 3 (m. 7-8)



[m]
contains a c#-g tritone
and the alternating pattern:
b#-b-a-g#

Mvt. 3 (m. 65-66)

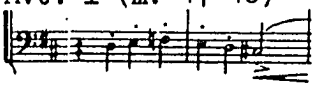


[q]
contains a d-a^b tritone
and is constructed from
the alternating pattern:
d-(e-f)-g-a^b-b^b-c^b-(d^b)

Ex. 6:36 continued

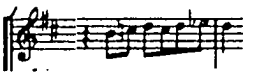
5. Motives which display an alternating pattern

Mvt. 1 (m. 47-48)



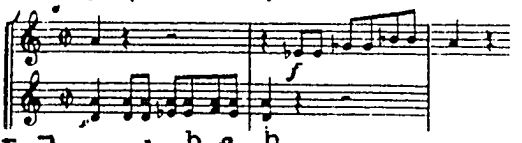
[e] c#-d-e-f

Mvt. 1 (m. 51-52



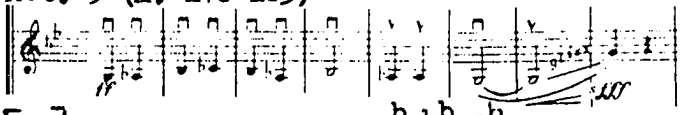
[f] b-c-d-e^{b}

Mvt. 3 (m. 61-62)



[p] d-e^{b}-f-g^{b}

Mvt. 5 (m. 176-183)



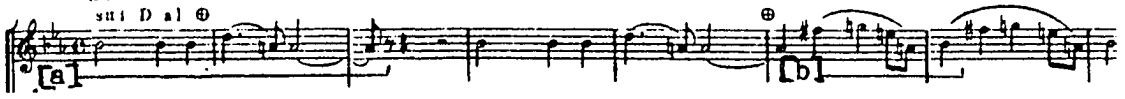
[yy] g-a^{b}-b^{b}-c^{b}

The extent of pedal tone involvement in this quartet becomes even more impressive when initial statements of prominent themes and motives are noted. Initial statements of thirteen of the nineteen prominent themes are accompanied either wholly or in part by one or more pedal tones while initial statements of twenty-four of the thirty prominent motives are supported by pedal tones.

Recurrence of an initial motive in either immediate or close proximity is a characteristic which was observed in eleven of the nineteen themes of this quartet. These themes are detailed in example 6:37.

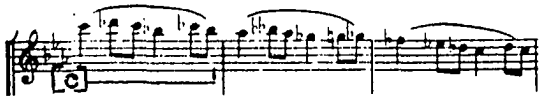
Ex. 6:37

Mvt. 1 (m. 3-10) - theme Ia



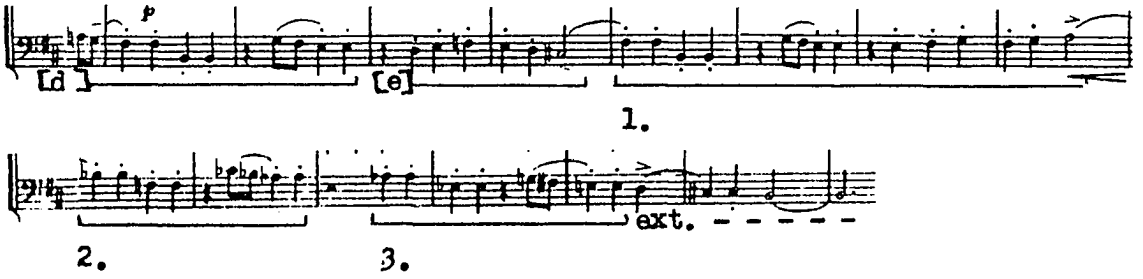
The initial motive [a] is stated and repeated; the initial statement of [b] is also repeated.

Mvt. 1 (m. 27-29) - theme Ib



The initial motive [c] is followed by a recurrence in sequence with an extension.

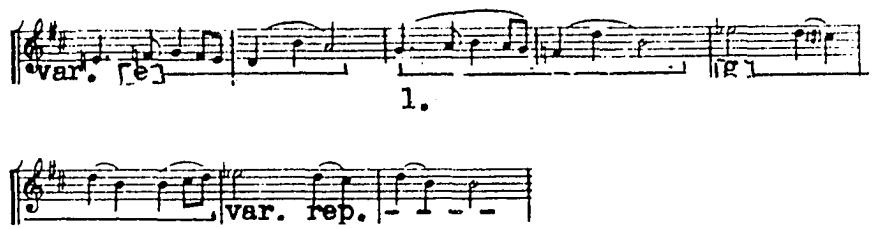
Mvt. 1 (m. 44-59) - theme IIa



At 1. motives [d] and [e] are both given a varied recurrence; another variant of [d] is shown at 2. while 3. is a modified sequence of 2.

Ex. 6:37 continued

Mvt. 1 (m. 67-74) - theme IIb

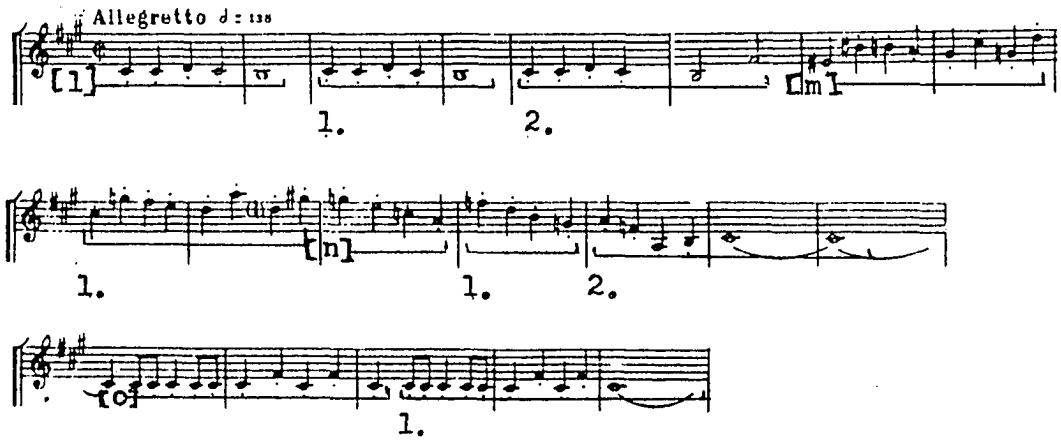


Theme IIb begins with a variant of motive [e] which recurs in sequence at 1. while the first recurrence of [g] is a varied repeat.

Mvt. 2 (m. 41-46) - theme B

Theme B begins with a transformation of motive [e] which immediately recurs in modified sequence.

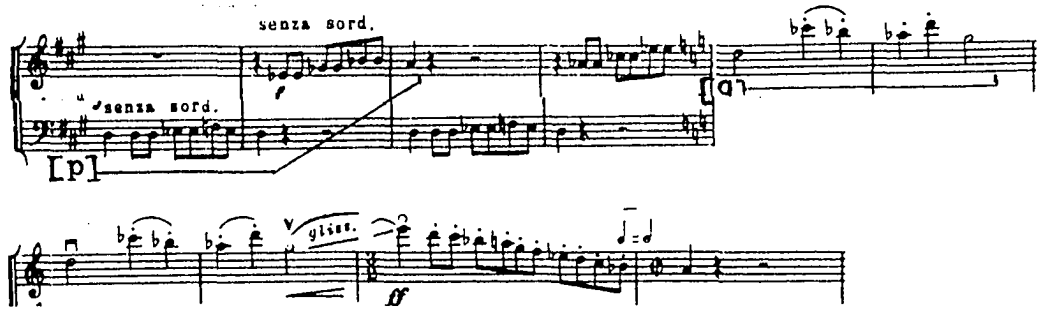
Mvt. 3 (m. 1-20) - theme Ia



All four of the prominent motives of theme Ia of movement three are treated to immediate recurrence. Motive [l]: statement, 1. repeat, 2. varied repeat; [m]: statement, 1. modified sequence; [n]: statement, 1. sequence, 2. modified sequence; [o]: statement, 1. repeat.

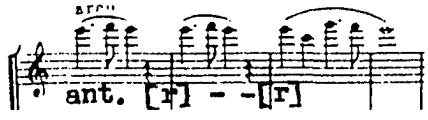
Ex. 6:37 continued

Mvt. 3 (m. 61-70) - theme IIa



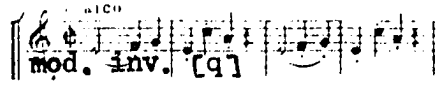
The recurrence of [p] is a varied repeat while the first statement of [q] is followed by a repeat with an extension.

Mvt. 3 (m. 137-149) - theme IIIa



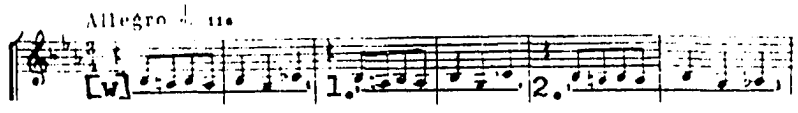
The two anticipations of motive [r] which precede its first statement create an aural impression similar to the other excerpts shown in this example.

Mvt. 3 (m. 149-152) - theme IIIb



Theme IIIb begins with a modified inversion of motive [q] which is repeated.

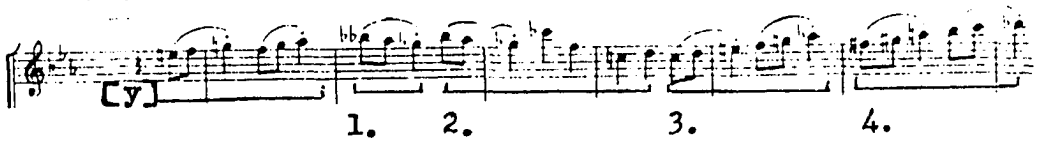
Mvt. 5 (m. 1-6) - theme Ia



Theme Ia of movement five begins in the same manner observed in theme Ia of movement three: initial statement of motive [w], 1. repeat, and 2. varied repeat.

Ex. 6:37 continued

Mvt. 5 (m. 33-43) - theme Ib



After the first statement of motive [y] the recurrences are: 1. an inverted fragment, 2. a repeat of 1 with an extension, 3. a variation of [y], and 4. is a sequence of 3.

Twenty of the thirty prominent motives of the ninth quartet are confined within the range of a perfect fifth or less. Of the ten remaining motives, eight have ranges which lie from a minor sixth to an octave while two [v] and [x] have ranges of more than an octave. Ten of the prominent motives move in totally conjunct motion while four may be considered basically conjunct in that they contain only one skip. Three of the motives move in totally disjunct motion while six may be considered as basically disjunct in that they are dominated by skips although containing some conjunct motion. The remaining seven prominent motives are constructed of an approximately equal number of steps and skips.

Further investigation of the thirty prominent motives to determine metric placement (accented versus unaccented) disclosed that they are about equally divided: sixteen motives begin on an accented beat while fourteen begin with an anacrusis. All of the motives in the accented catagory begin on the first beat of the measure; only two of the accented group are in triple meter, the remaining fourteen are

either duple or quadruple meter. Four of the motives in the unaccented catagory are in triple meter with the remaining ten in either duple or quadruple meter. The prominent motives range in length from the three notes of motive [y] to the fifteen notes of [p]. Although motive [p] contains the most notes the longer note values and adagio tempo of [j] and [t] give them a temporal span which is considerably longer than the other motives of this quartet.

Unity of the primary linear material also tends to be served by instrumentation or timbre, for the violin sound has been selected for twenty-one of the total of forty-two initial statements and recurrences of the prominent themes; in four more instances the violin sound is used in combination with either the cello or viola. The cello has seven initial statements and/or recurrences of prominent themes and shares honors with either violin or viola in four more. The viola has six initial statements and/or recurrences and shares two more. The initial statement and two recurrences of theme Ia of movement four are stated in octaves by the second violin, viola, and cello. The predominance of violin timbre is even more impressive when only the first statement of the various prominent themes is considered. Thirteen of the eighteen themes feature violin timbre for their initial statement.

All of the themes of this quartet are initially stated either unaccompanied or with only the most minimal accompaniment, this contributes to an easy accessibility of the thematic materials. As in the case of quartets seven and eight this accessibility facilitates

recall of the prominent linear material and assists the ear in recognition of the recurrences of motive and themes as they delineate the formal structure.

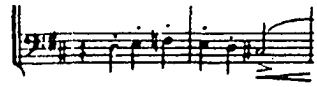
The Processes of Anticipation and Emergence

The prominent use of pedal tones, tritones, and alternating scalar patterns has been well documented. These important aural events of theme Ia of movement one have emerged at the highest architectonic level as prominent linear features of all movements.

The emergence of the contours of motives [w] and [x] of movement five has been traced from the early measures of movement one in examples 6:22 (p. 247) and 6:23 (p. 249). Documented in example 6:38 are important contributions made to unity among linear materials at the highest architectonic level by motive [e].

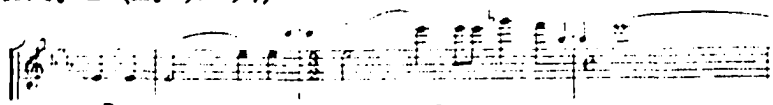
Ex. 6:38

Mvt. 1 (m. 47-48)



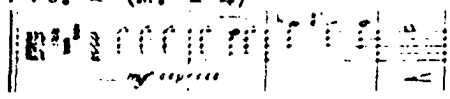
[e]

Mvt. 1 (m. 91-94)



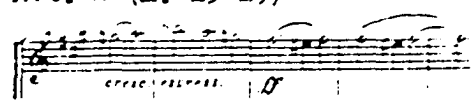
[h] [i]

Mvt. 2 (m. 1-4)



[j]

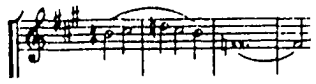
Mvt. 2 (m. 15-19)



transf. [e]

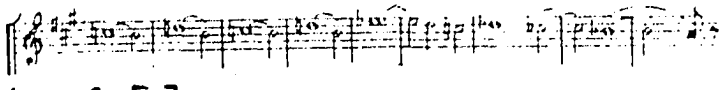
Ex. 6:38 continued

Mvt. 2 (m. 41-44)



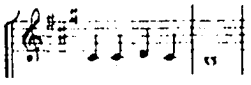
transf. [e]

Mvt. 2 (m. 60-67)



transf. [e]

Mvt. 3 (m. 1-2)

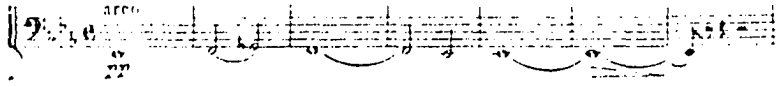


[l]

Mvt. 3 (m. 61-62)

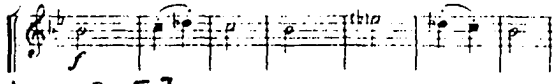
[p]

Mvt. 4 (m. 1-7)



[t]

Mvt. 5 (m. 152-158)

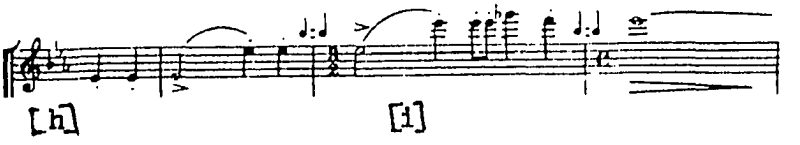


transf. [e] ext. - - - -

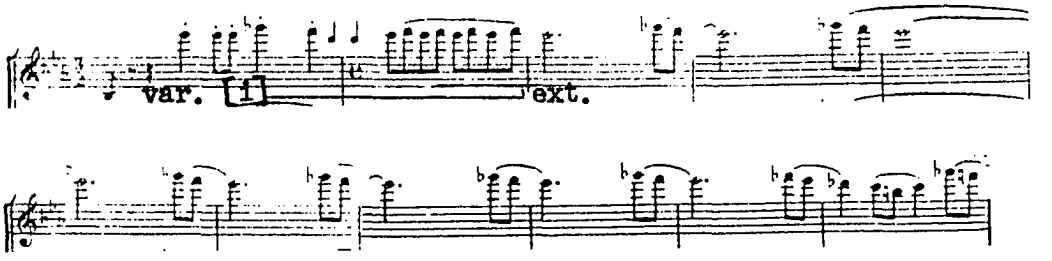
Although motives [h] and [i] may be considered as a transformation of [e], as shown in example 6:39 they serve in their own right as unifying factors at the highest architectonic level.

Ex. 6:39

Mvt. 1 (m. 91-94)

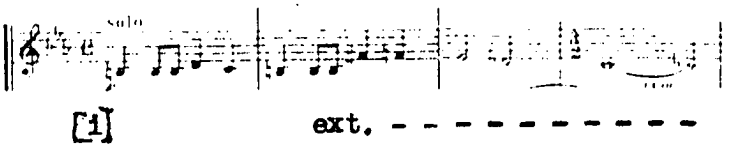


Mvt. 1 (m. 110-120)

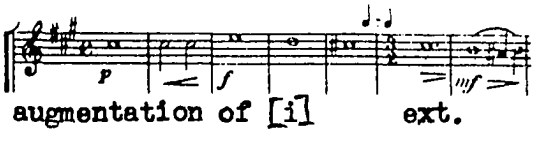


A recurrence of motive [i] is extended; a fragment of the extension becomes an ostinato pattern for a recurrence of theme IIa.

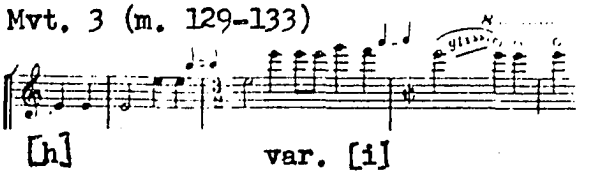
Mvt. 1 (m. 147-150)



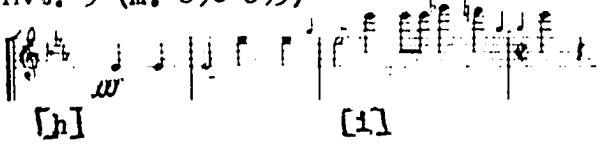
Mvt. 2 (m. 21-26)



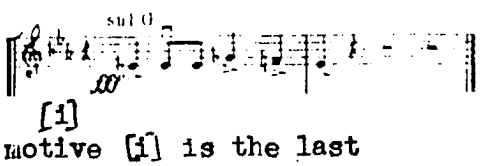
Mvt. 3 (m. 129-133)



Mvt. 5 (m. 690-693)



Mvt. 5 (m. 708-709)



Motive [i] is the last sound of this quartet

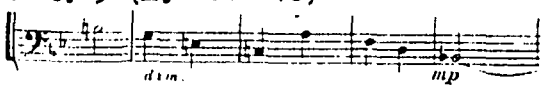
As shown in example 6:40 motives [n] and [o] of movement three recur in movement five.

Ex. 6:40

Mvt. 3 (m. 11-12)

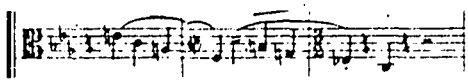
[n] sequence

Mvt. 5 (m. 266-270)



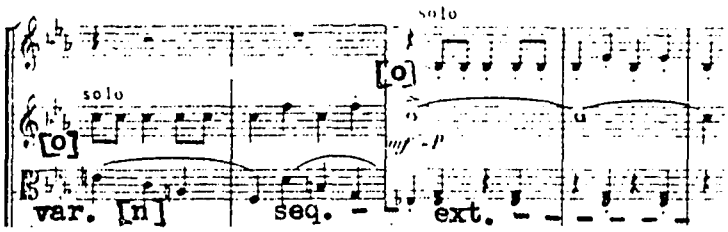
var. [n] sequence

Mvt. 5 (m. 538-540)



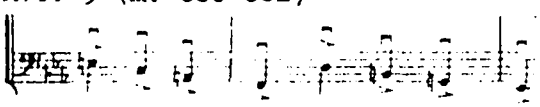
var. [n] sequence

Mvt. 5 (m. 610-614)



A recurrence of motives [n] and [o] in vertical combination.

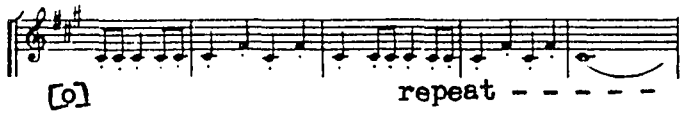
Mvt. 5 (m. 680-682)



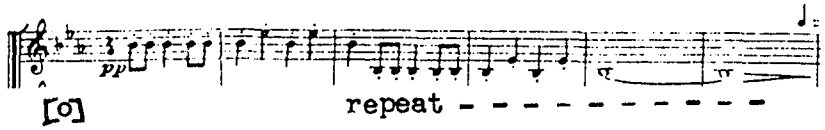
var. [n] sequence

Ex. 6:40 continued

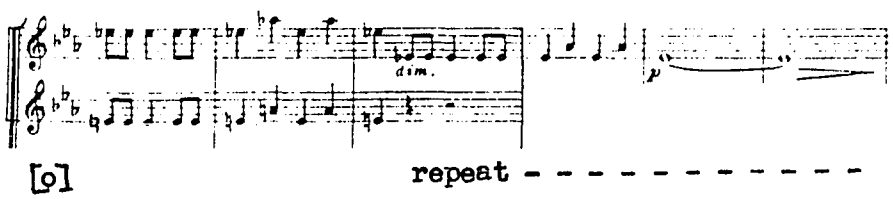
Mvt. 3 (m. 16-22)



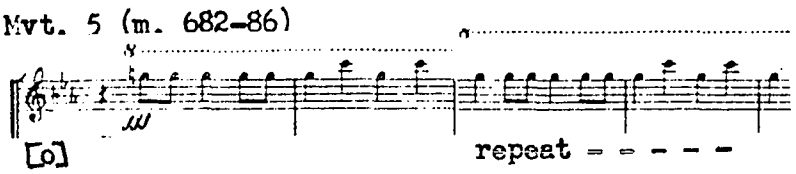
Mvt. 5 (m. 561-566)



Mvt. 5 (m. 581-586)



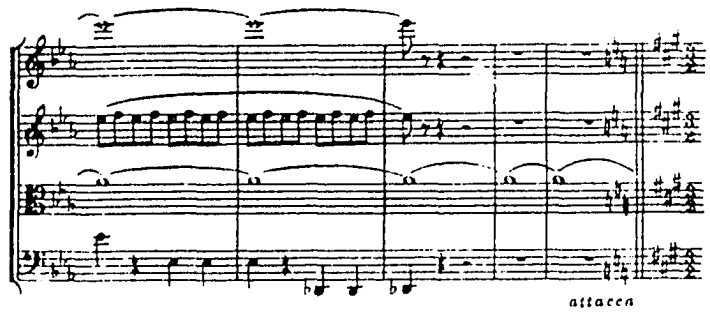
Mvt. 5 (m. 682-86)



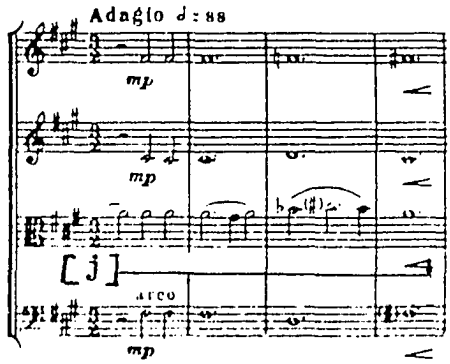
At the next highest architectonic level are those anticipations between adjacent movements. Several notable techniques are detailed in example 6:41.

Ex. 6:41

Mvt. 1 (m. 165-169)

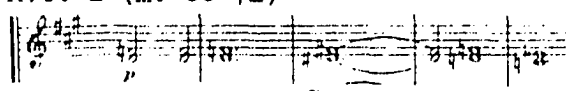


Mvt. 2 (m. 1-4)



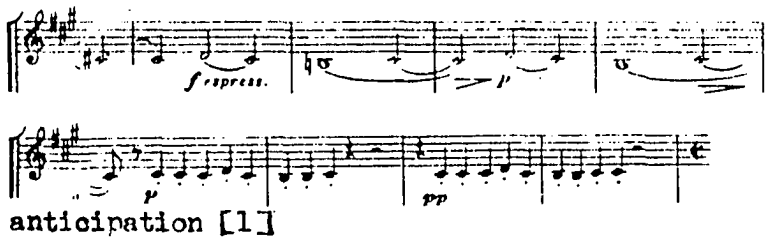
In the final measures of movement one an a pedal in the viola prepares the first pitch of motive [j] of movement two.

Mvt. 2 (m. 68-72)



anticipation of [1]

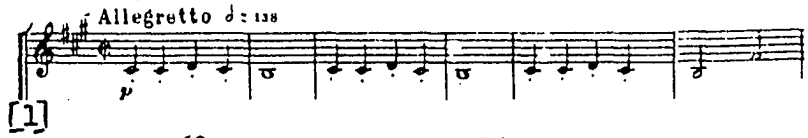
Mvt. 2 (m. 80-88)



anticipation [1]

Ex. 6:41 continued

Mvt. 3 (m. 1-6)



[1]

At measures 68-72 the first violin suggests an augmentation of the contour of motive [1] of movement three. Measures 80-88 anticipate both the contour and pitches of [1] as well as a closer approximation of its rhythm

Mvt. 3 (m. 221-230)

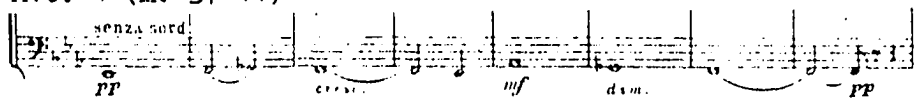
anticipation of [1]

Mvt. 3 (m. 250-263)

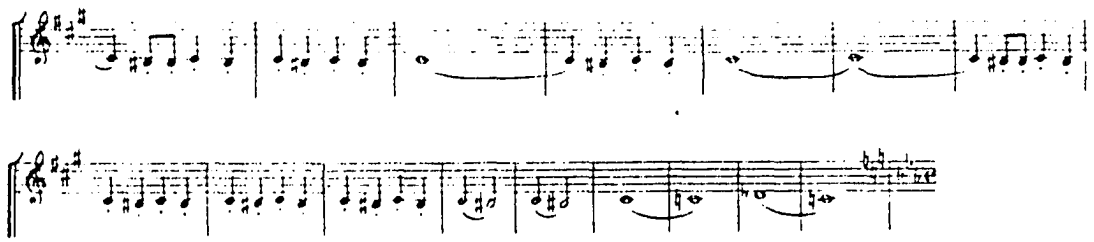
anticipation of [1]

Compare this contour with measures 37-44 of movement four shown below.

Mvt. 4 (m. 37-44)



Mvt. 3 (m. 266-281)



Ex. 6:41 continued

Mvt. 4 (m. 1-6)

In the closing measures of movement three the first violin anticipates the d^{b}-c pitches of the slow trill of measures one to four of movement four.

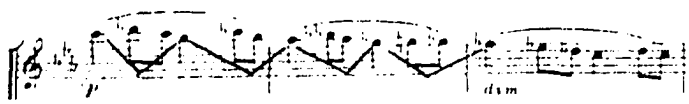
The anticipation of motives [w] and [x] of movement five are detailed in examples 6:22 (p. 247) and 6:23 (p. 249).

Perhaps of less importance to structural unity but of no less interest as stage setting devices are the anticipations shown in example 6:42. These anticipations foretell the appearance of motives and themes immediately before or in close proximity to their original statements or before structurally important recurrences.

Ex. 6:42

Mvt. 1 (m. 25-26)

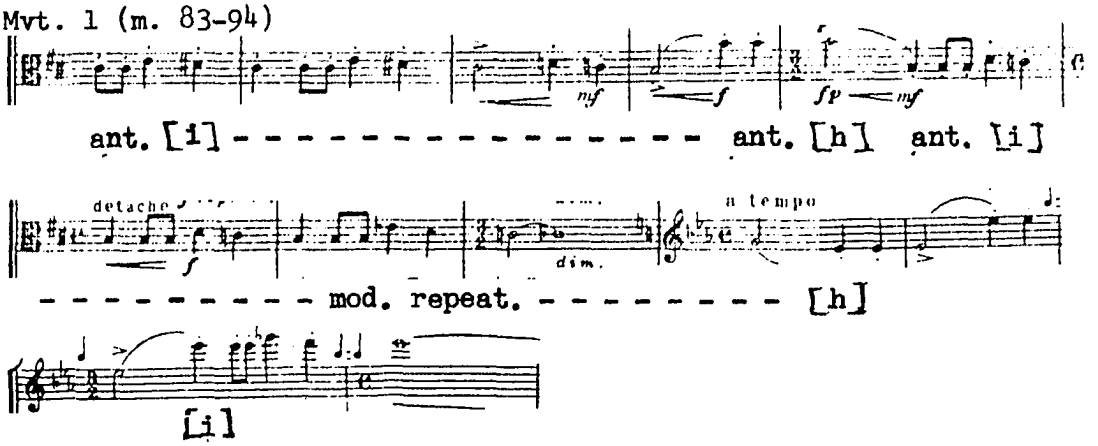
Mvt. 1 (m. 27-29)



The descending major seconds of measure twenty-five anticipate the prominent whole tone pattern at the beginning of theme Ib (m. 27-29).

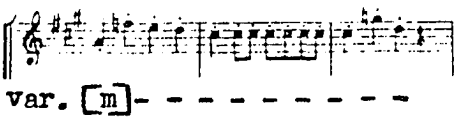
Ex. 6:42 continued

Mvt. 1 (m. 83-94)

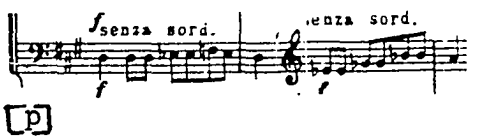


The details of the anticipation of motives [h] and [i] are shown on the excerpt.

Mvt. 3 (m. 53-55)

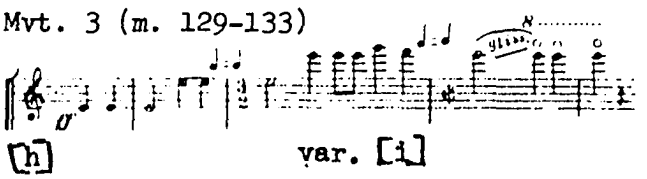


Mvt. 3 (m. 61-62)

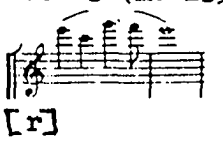


A variant of [m] anticipates the rhythm of the first fragment of motive [p].

Mvt. 3 (m. 129-133)



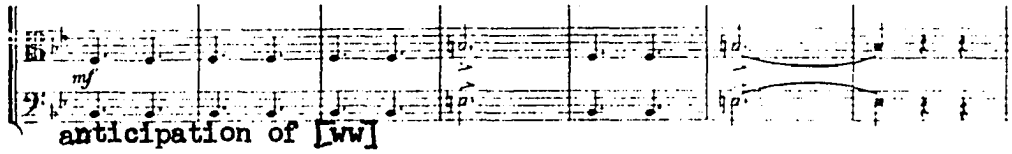
Mvt. 3 (m. 139-140)



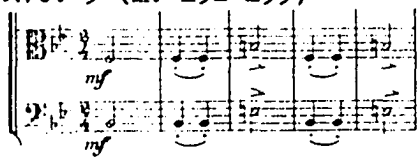
A recurrence of motives [h] and [i] anticipates the pitches and basic contour of the first statement of [r].

Ex. 6:42 continued

Mvt. 5 (m. 145-151)

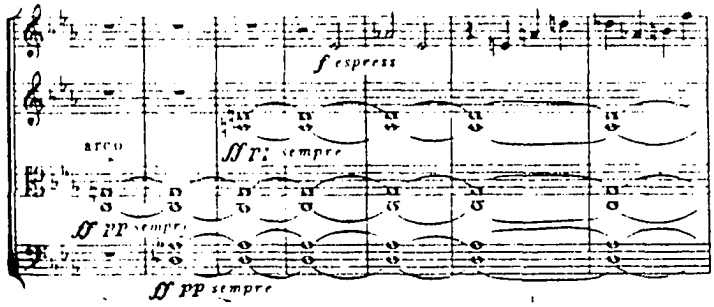


Mvt. 5 (m. 152-155)

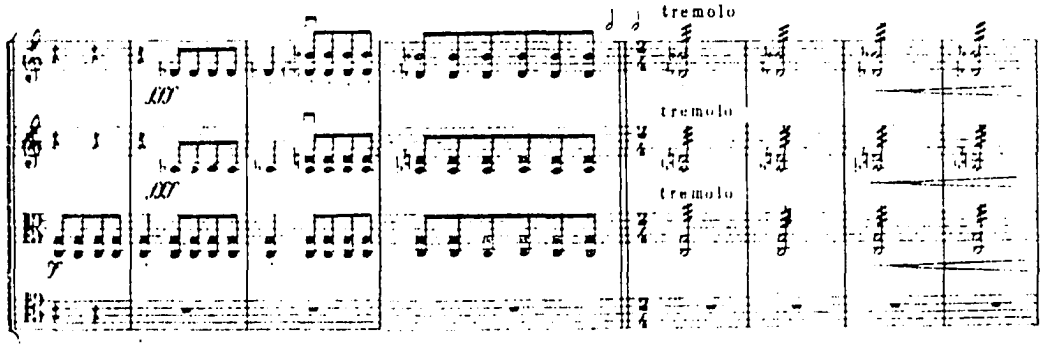


An anticipation of the meter, rhythm, and pitches of motive [ww] introduces theme IIa (m. 152).

Mvt. 4 (m. 58-64) - beginning of theme IIa

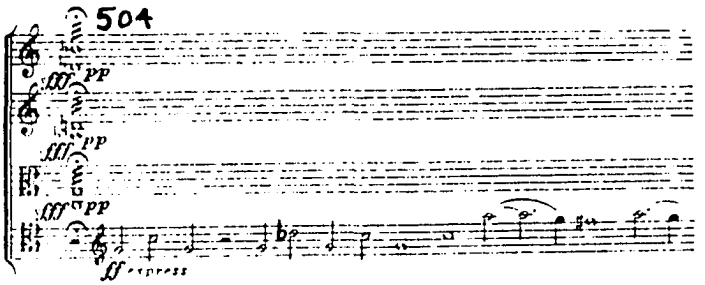


Mvt. 5 (m. 496-504)



Ex. 6:42 continued

Mvt. 5 (m. 496-504) continued



Due to the similarity of the double stops at measures 496-504 of movement five to those at measures 58-60 of movement four, an expectation for theme IIa of movement four is created. This expectation is fulfilled by the cello recitative at measure 504.

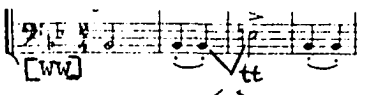
Non-Linear Relationships

A careful investigation of the score has revealed few apparent instances of the involvement of the pitches of prominent motives in non-linear relationships. Although involvement of prominent motives in sequence construction, entrances of imitation, vertical structures, and tonal centers is limited, this involvement does contribute to structural unity. As was the case in quartets seven and eight the alternating scalar pattern appears to have influenced the selection of the prominent tonal centers of the ninth quartet. The prominent tonal centers of movements one, two, three, and four are accommodated within an alternating M/m pattern constructed from the quartet's E^{b} tonal center: e^{b}-f-f#-(g#)-a-b-c-d. The prominent tonal centers of movement five are accommodated within an alternating m/M pattern

constructed from the quartet's E^b tonal center: e^b-e-(f#-g-a)-b^b-(c-d^b). The tritone relationship (b^b-e) of the tonal centers of thematic area II of movement five stems directly from motive [ww].

PROMINENT TONAL CENTERS OF THE NINTH QUARTET

Movement 1:	Ia	Ib	Ia	II	Ia'	II'	Ib'	Coda
	E^b	C:	E^b:	B:	E^b:	E^b: / F:	F:	E^b:
Movement 2:	A		B		A'			
	F#		B:		F#:			
Movement 3:	I	II	III	II	Ia	Ia'		
	F#:	D:	A:	D:	C:	F#:		
Movement 4:	I		I'		II		I	
	E^b:		E^b:		E^b:		E^b:	



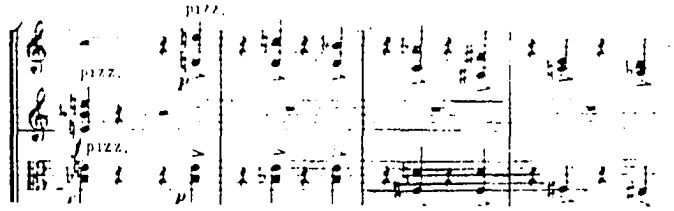
Movement 5:	I	IIa	IIb	IIa	I'	IIb'	IIa'	Coda
	E^b:	B^b:	E:	B^b:	E^b:	E:	B^b:	E^b:

The prominent tonal centers suggest the use of two different alternating patterns constructed from the quartet's E^b tonal center: movements one through four are accommodated within the pattern e^b-f-f#-(g#)-a-b-c-d while movement five is accommodated within the pattern e^b-e-(f#-g-a)-b^b-(c-d^b).

Like the eighth quartet the procedures in this quartet are primarily linear. Due to the preponderance of linear procedures and the great prominence of pedal tones there are very few vertical structures. Furthermore all vertical structures involve pedal tones and/or doubling of prominent contours. The vertical structures shown in example 6:43 are typical of this quartet.

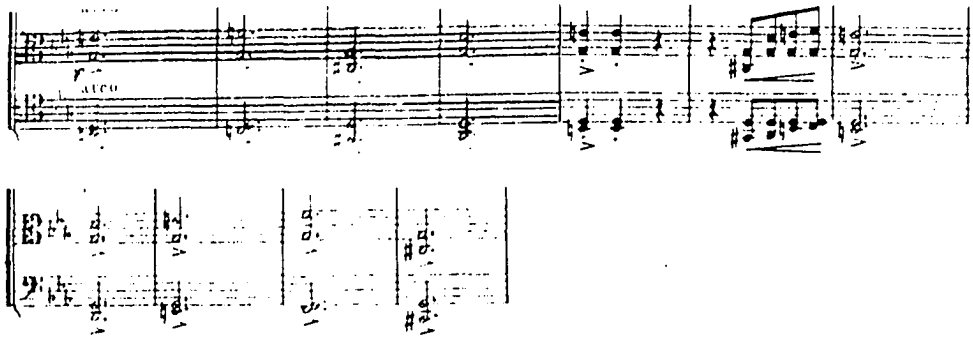
Ex. 6:43

Mvt. 3 (m. 235-238)



A series of whole-tone vertical structures are used to harmonize a descending whole-tone scale in the first violin. All pitches (except the final e# in the viola) belong to the whole-tone scale: d-e-f#-a^{b}-b^{b}-c.

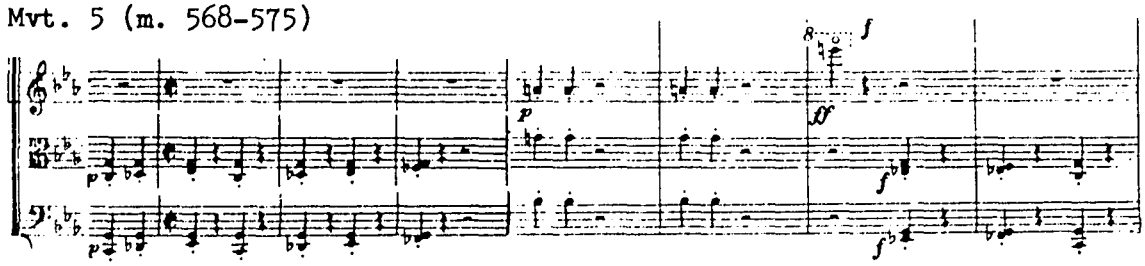
Mvt. 5 (m. 116-126)



alternating pattern: c#-d-e-f-g

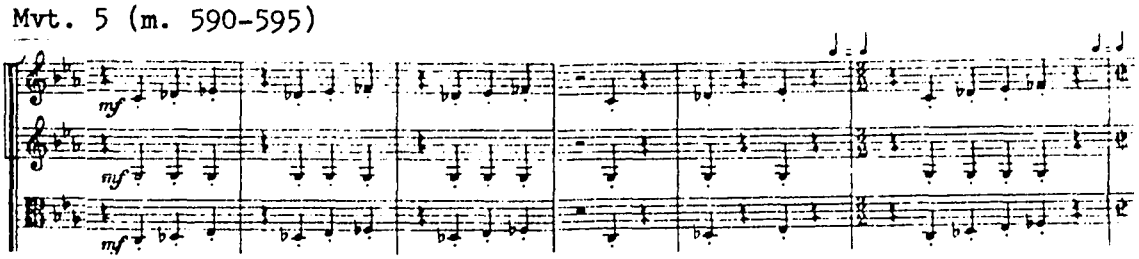
Ex. 6:43 continued

Mvt. 5 (m. 568-575)



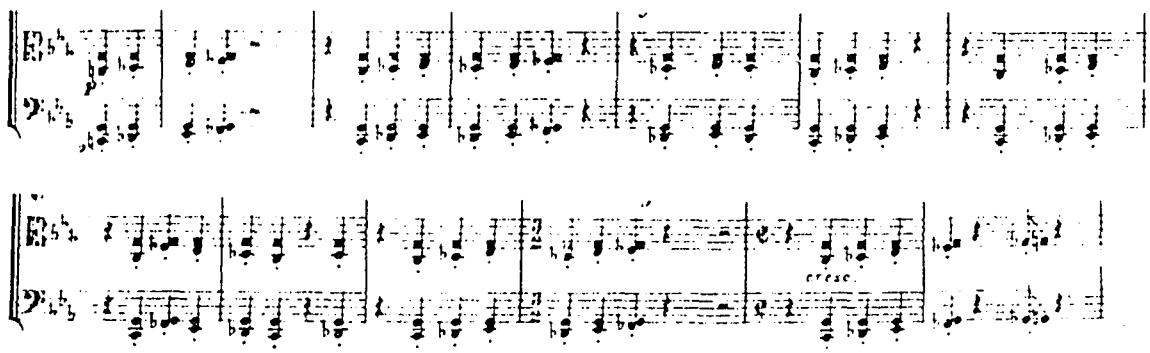
alternating pattern: c-d^b-e^b-f^b-(g^b)-g-a-b^b.

Mvt. 5 (m. 590-595)



alternating pattern: c-d^b-e^b-f^b-(g^b)-g

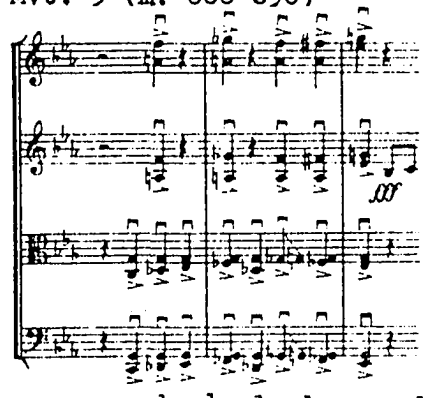
Mvt. 5 (m. 615-627)



alternating pattern: c-d^b-e^b-f^b-g^b-g

Ex. 6:43 continued

Mvt. 5 (m. 688-690)



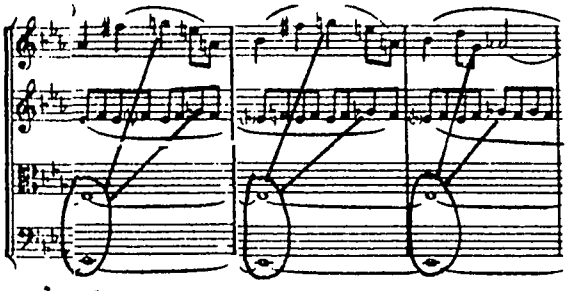
alternating pattern: c-d^b-e^b-f^b-g^b-g-a-b^b
The f in the first and second violin does not belong to this pattern.

The last five excerpts of example 6:43 above are variants of a prominent accompanimental pattern of movement five.

In this study attention has been called numerous times to the major/minor dichotomy which is a characteristic of alternating scalar patterns. On the line score a number of occasions were noted where major thirds contracted to minor quality and minor thirds expanded to major quality. The question of major versus minor quality is posed in the opening measures of movement one, is restated intermittently throughout this quartet, and is heard in the final cadence chord of movement five; the excerpts shown in example 6:44 are typical of the procedures observed.

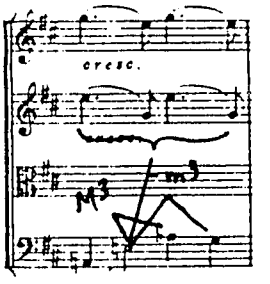
Ex. 6:44

Mvt. 1 (m. 8-10)



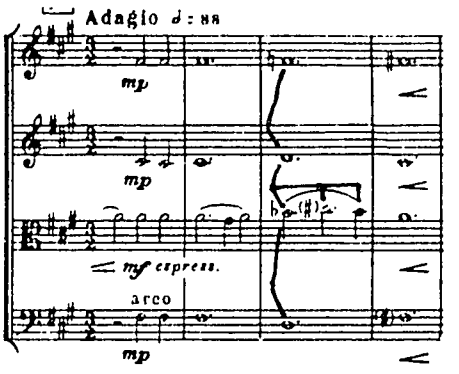
E^b/e^b

Mvt. 1 (m. 76)



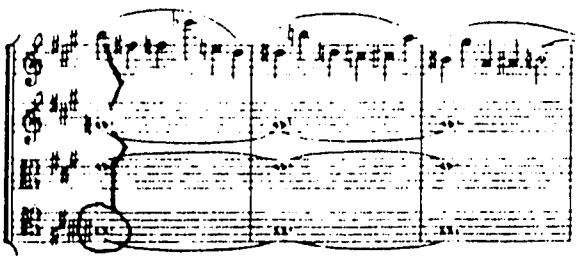
E/e

Mvt. 2 (m. 1-4)



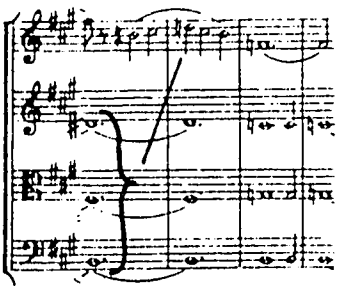
B^b/b^b

Mvt. 2 (m. 29-31)



E/e

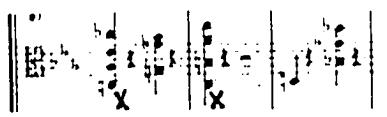
Mvt. 2 (m. 41-42)



B/b

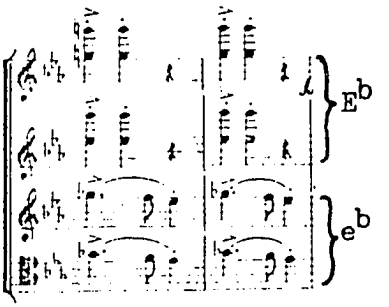
Ex. 6:44 continued

Mvt. 4 (m. 53-54)



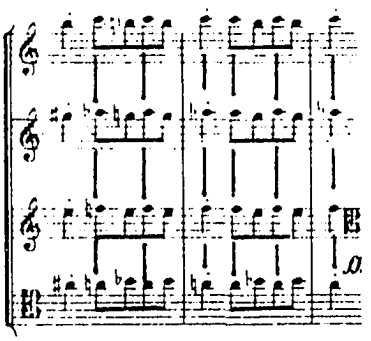
A^b/a^b

Mvt. 5 (m. 87-88)



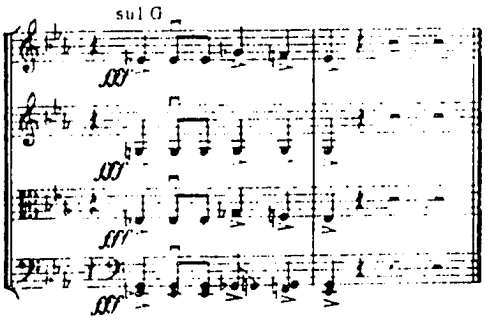
E^b/e^b

Mvt. 5 (m. 494-495)



F/f

Mvt. 5 (m. 708-709)



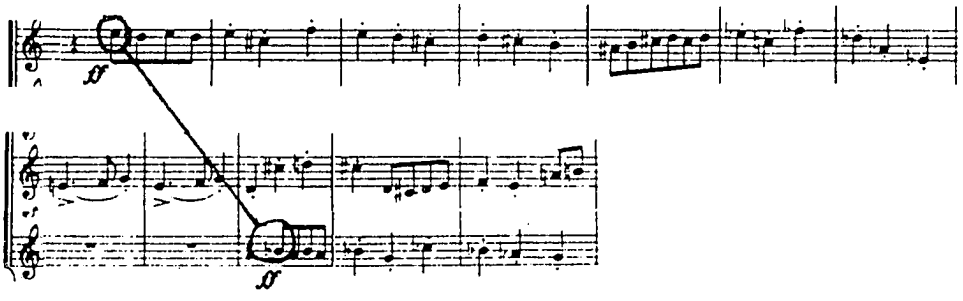
E^b/e^b

Example 6:45 displays two instances of tritone involvement in sequence and imitation.

Ex. 6:45

Mvt. 1 (m. 132-133)

Mvt. 5 (m. 421-432)



Chapter 7

STRING QUARTET NO. 10 IN A^{b} MAJOR, OPUS 118

The tenth quartet was composed in the summer of 1964 and is dedicated to the Russian composer Moisei Weinberg. The first performance was played on November 20, 1964 at the Moscow Conservatory by the Beethoven String Quartet. This same ensemble played the quartet's first Leningrad performance the following day in Glinka Hall.

With the exception of the dynamic second movement, the tenth quartet is a composition of intimate serenity. The dynamics of the first movement never rise above piano. Following a fortissimo statement of its passacaglia theme, the third movement moves to forte only three times. The fourth movement rises once to a triple forte in a well-crafted climax near the conclusion of its development section. In contrast to the first, third, and fourth movements, the second movement is scored fortissimo and triple forte throughout.

The four movements of this quartet display a variety of formal structures. The first movement is basically a sonata-type design without development, thus justifying the designation of sonatina. The second movement is a rondo in five sections, while the third movement is a passacaglia with seven variations. The

fourth movement follows the third without pause. The formal scheme of the fourth movement is a large six part rondo with development and elaborate coda. This coda summarizes the linear material of movements one and four.

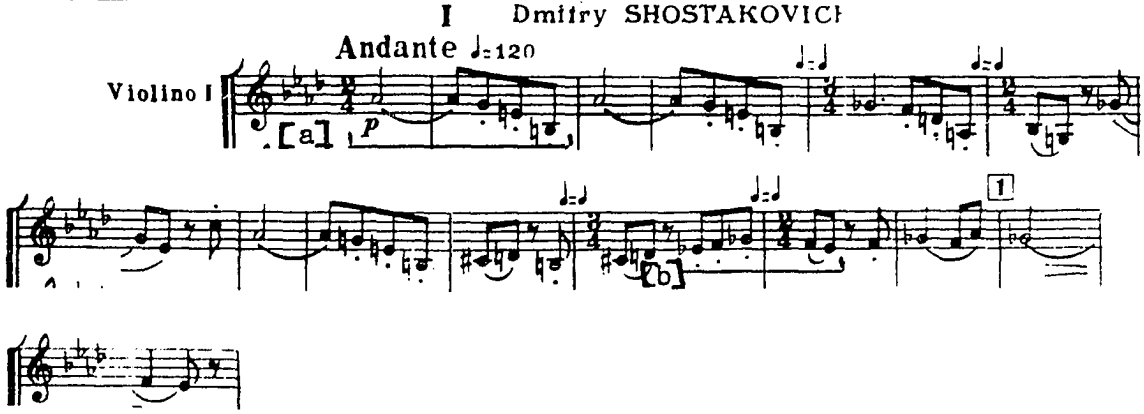
The graphic analysis charts show recurrence of the several thematic areas as they outline the macro-structure of the various movements. Those recurrences inevitably display variation, transformation, and/or permutation of the motives of the original thematic material.

THEMATIC INDEX

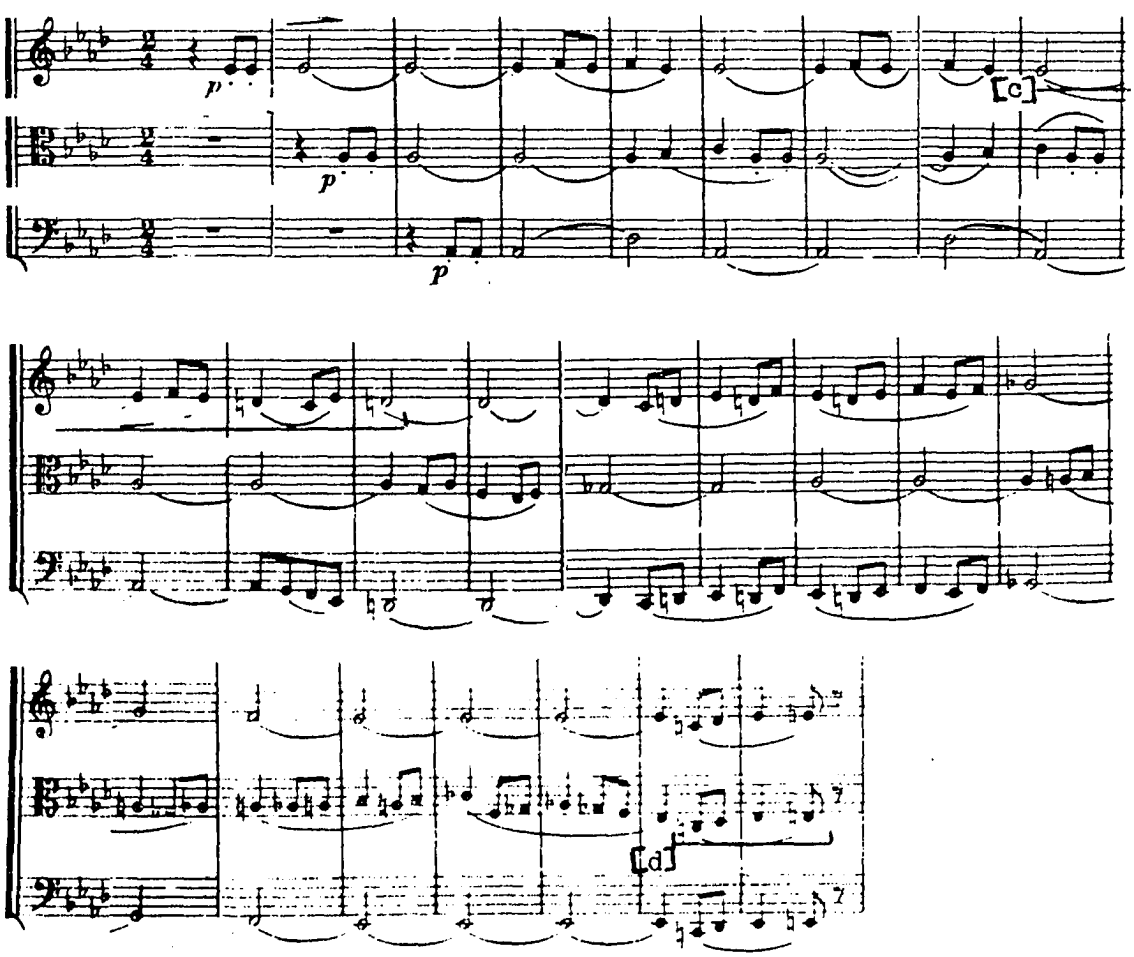
Tenth Quartet
Movement One

THEME Ia

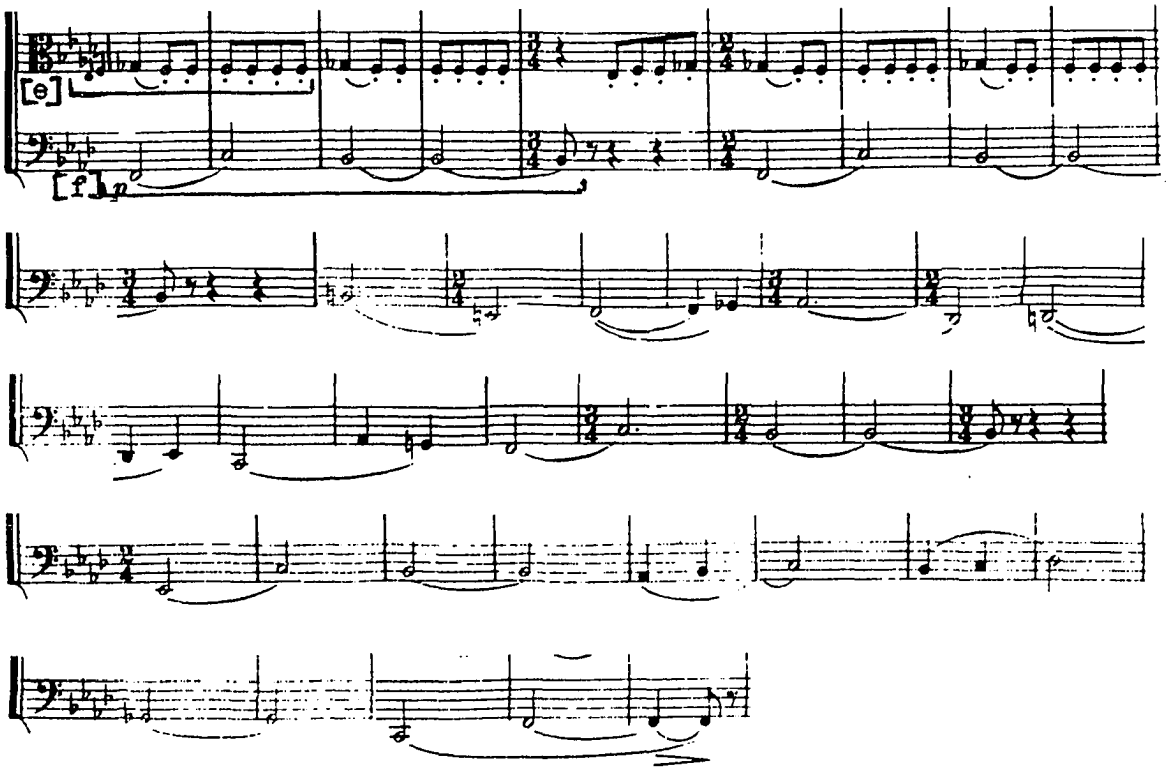
I Dmitry SHOSTAKOVICH



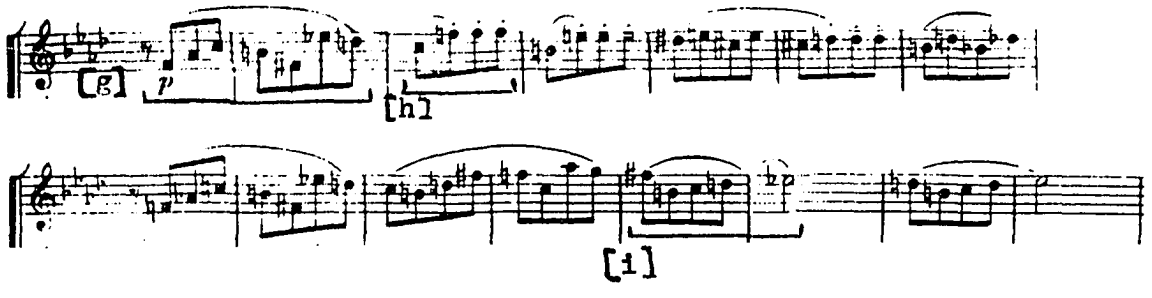
THEME Ib



THEME IIa



THEME IIIa



GRAPHIC ANALYSIS OF FORMAL STRUCTURE

First Movement — Andante - A^b - Sonatina - 241 measures - $\frac{2}{4}$ meter.

Thematic Area I — transition

A	B	A'	[a]	[c]	[d]
1	14	37	53		

A^b:

Thematic Area II

A	A'
73	93

F:

Thematic Area III — retransition

A	[h]
111	

F:

Thematic Area I

B	A
133	149

A^b:

Thematic Area II

A
159

A^b:

Thematic Area III

A'
175

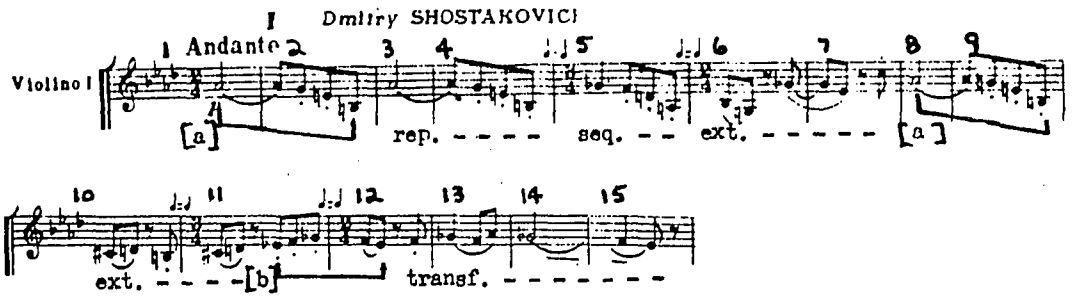
A^b:

Coda Section

[c]	[a]	[d]	[h]
191			

A^b:

THEME Ia

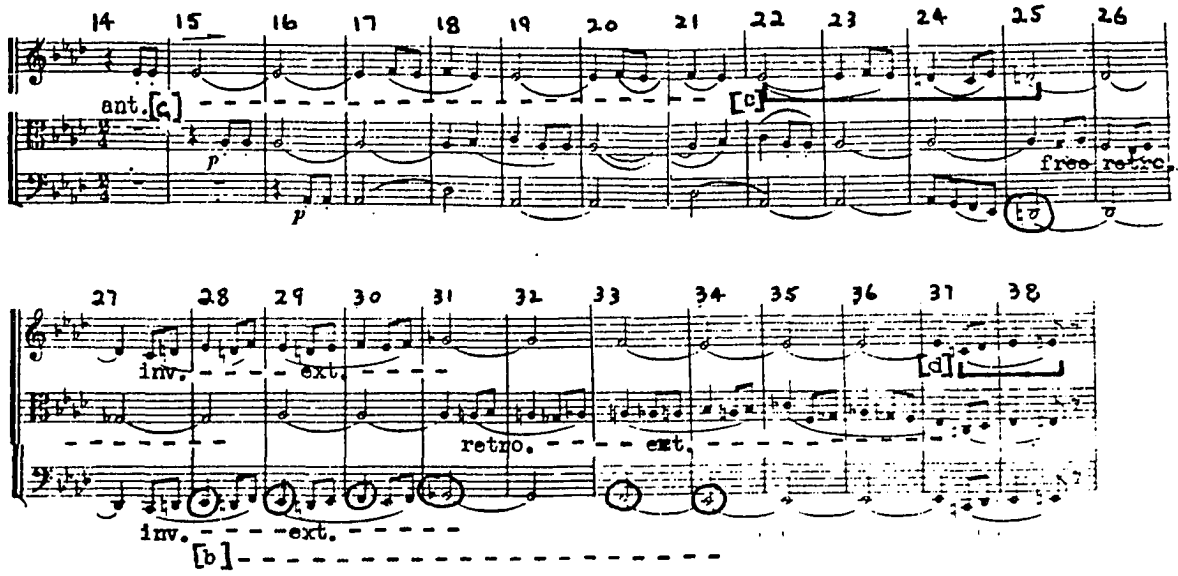


The initial statement of theme Ia (m. 1-15) is presented unaccompanied by the first violin. The first ten measures grow from motive [a] (m. 1-2) which is characterized chiefly by a descending minor second followed by descending staccato eighth notes which arpeggiate a minor triad. This first aural stimulus effectively sets-up a major/minor dichotomy: e-g#(a^b)-b versus e-g-b. The linear material immediately capitalizes upon this dichotomy through the thirds in the extensions at measures 6-8 and 10-11. The minor third is emphasized in motives [b] and [c].

Although A^b is the primary tonal center of movement one, the e minor triad which follows the first note a^b of motive [a] casts immediate doubt upon the tonal claims of A^b. This is important, for as will be observed later the d4/M3 a^b-e forms the boundry of the primary tonal centers of the four movements of the quartet: A^b-E-E-A^b.

Motive [b] (m. 11-12) is immediately transformed by augmentation and a changing tone figure with continued emphasis on the minor third. The importance of this transformation lies in its anticipation of the changing tone contour of motive [c] at measures 22-25.

THEME Ib



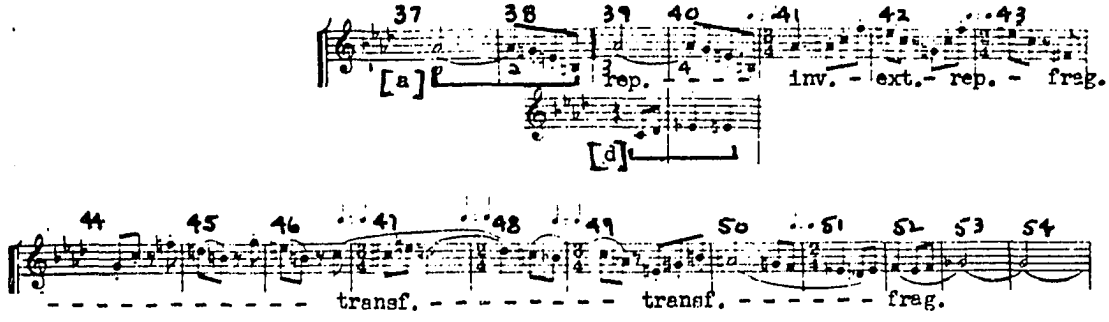
Theme Ib (m. 14-40) is a three voice texture formed by the lower instruments. Beginning at measure fifteen the viola emphasizes the major third which yields prominence again to the minor third in motive [c] (m. 22-25). Motive [c] dominates the texture of measures 22-36 by what the ear hears as a rhythmic counterpoint. By the modifications indicated on the score, the distinctive changing tone figure of motive [c] is gradually dissipated and the rhythmic pattern assumes a stepwise contour which leads into motive [d] at measures 37-38.

Motive [d] like [a] clearly stresses the major/minor dichotomy. As will be seen in retrospect this dichotomy and the m2/M2/m2 scalar pattern of motive [d] are important contributors to linear unity within and among the movements of this quartet.

The position and temporal span of the circled pitches in the cello line at measures 25-34 emphasize the close relationship between motives [b] and [d]. Measures 28-34 are a filling of [b]. At measures

25-27 the pitch d is added to this contour to anticipate the m2/M2/m2 scaler pattern of motive [d].

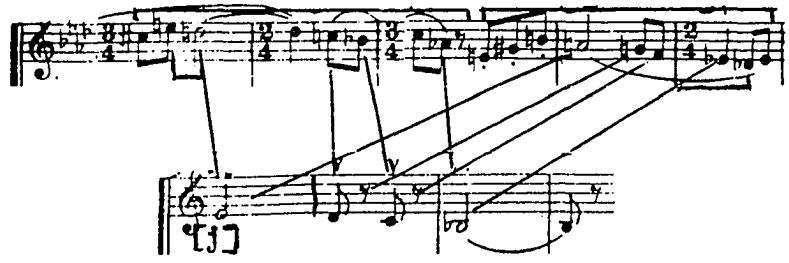
THEME Ia'



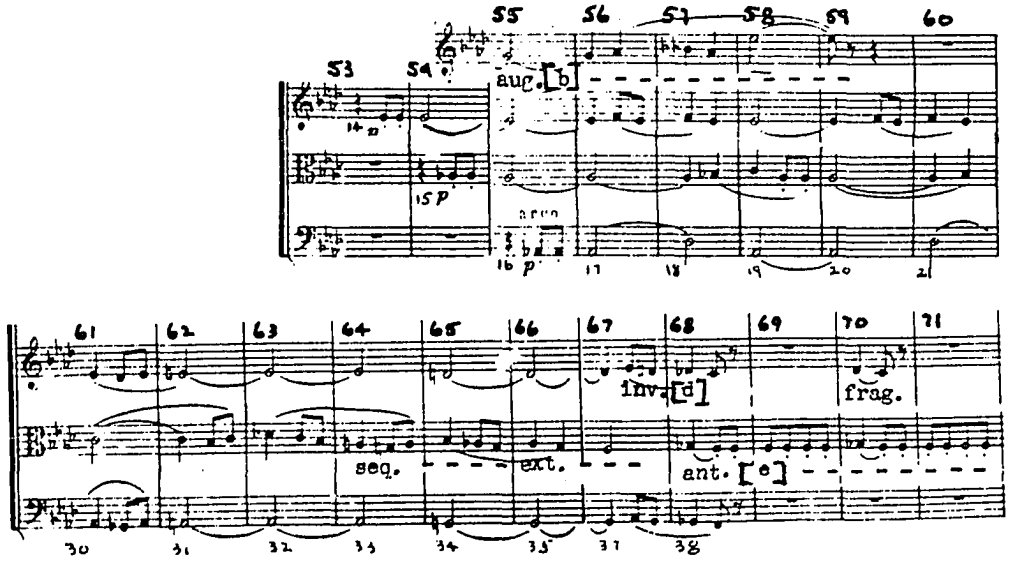
After stating the first four measures of the original, the first recurrence of theme Ia (m. 37-52) becomes a modified return. Measures 44-46 grow from fragmentation of the inversion of [a] at measures 41-42; these fragments display both contraction and expansion of intervals. Measures 47-51 contain two transformations of motive [a] which result from addition of notes to a fragment of its inversion. The aural effect of the second transformation is that of a modified sequence of the first transformation. At the same time that the transformations at measures 47-51 serve to vary this return of theme Ia, they also anticipate the descending whole tone pattern of motive [j] as shown in example 7:1.

Ex. 7:1

Mvt. 1 (m. 47-51)

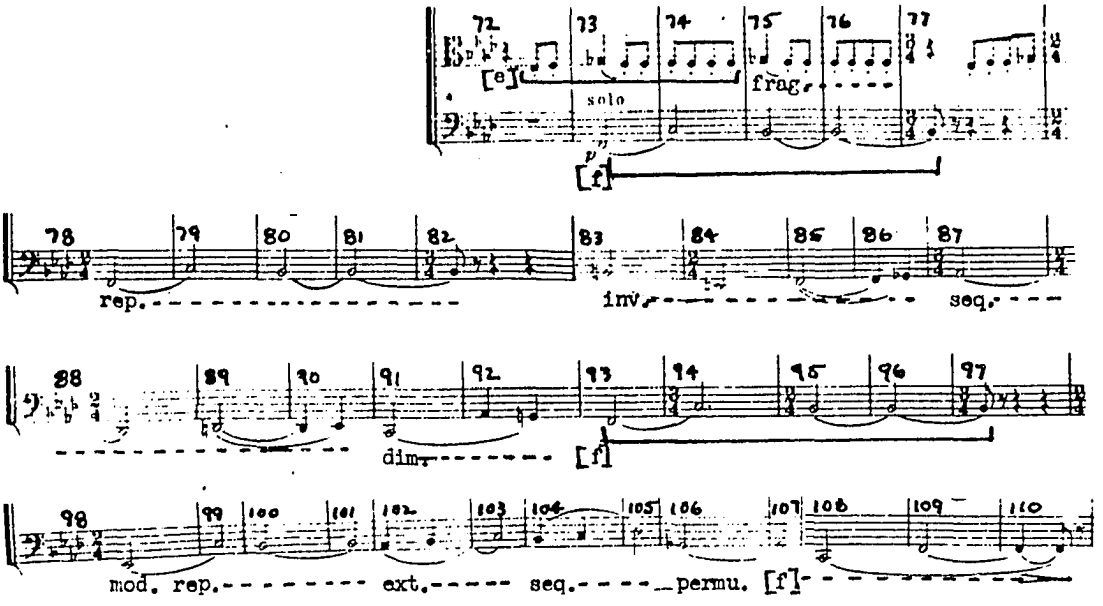


TRANSITION



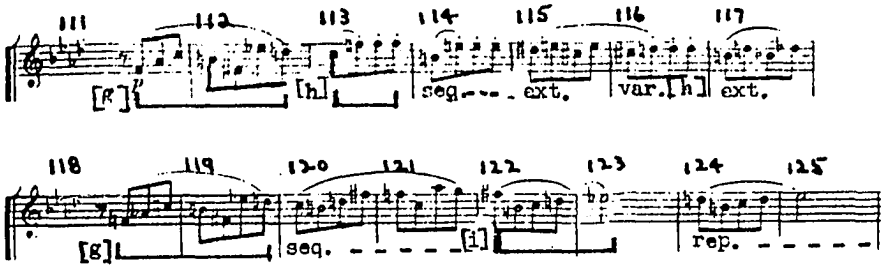
The first recurrence of theme Ib (m. 53-68) serves as a transition to theme IIa (m. 72-110) and begins with measures 14-21 of the original statement. In this varied recurrence of theme Ib, measure 61 suggests an overlapping of measures 22 and 30 of the original statement. Although the first violin line at measures 55-58 did not occur in the original statement (m. 16-19), as shown on the line score it does not appear to be a new shape.

THEME IIa



Investigation of the contour of motive [e] (m. 72-74) suggests a transformation of motive [b] achieved principally by deletion of the last pitch of [b] and temporal augmentation by repetition of its penultimate pitch. Theme II (m. 73-110) is a legato cello line which grows entirely from motive [f] (m. 73-77). The details of this growth process are noted on the line score. The permutation suggested at measures 106-110 shows motive [f] with its notes in 2-1-3 order.

THEME IIIa



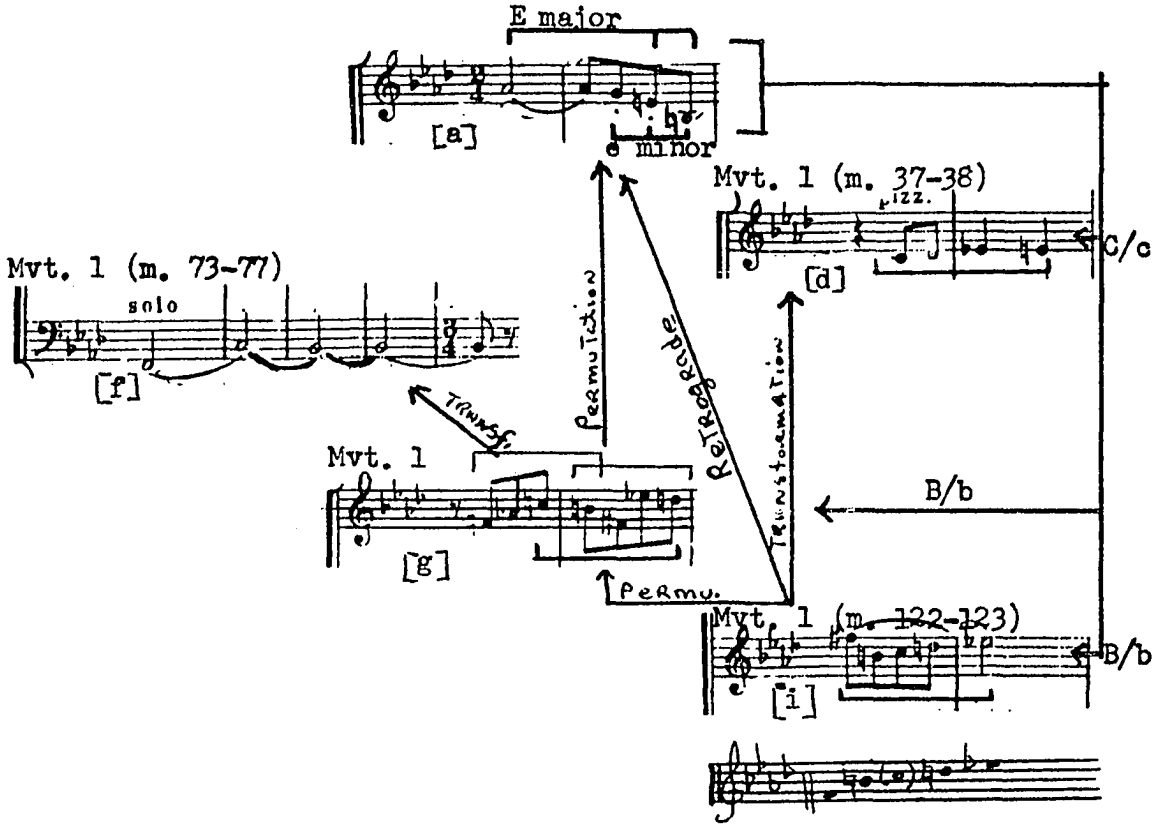
The ever-moving eighth notes of theme IIIa (m. 111-125) serve to unify it with thematic areas I and II. Like theme Ia, the principal motives of theme IIIa show distinct triadic influence. Motive [g] (m. 111-112) is composed of two arpeggiated triads: f minor followed by b minor with an $\underline{e^{b}}$ appogiatura. By use of the enharmonic $\underline{d\#}$ spelling for this appogiatura it is apparent that the major/minor dichotomy initiated by motive [a] is also present in [g] (b-d-f# versus b-d#(e^{b})-f#).

Motive [g] is followed immediately by [h] (m. 113) an ascending fourth with staccato repeated notes which relate it to motive [e]. Ultimately the staccato influence may be traced back to motive [a] (m. 1-2).

Example 7:2 presents a summary of the relationships noted thus far among the motives of the three thematic areas of movement one.

Ex. 7:2

Mvt. 1 (m. 1-2)



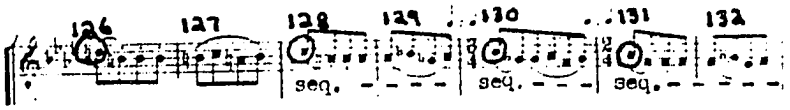
Motive [i] suggests a transformation of [d] accomplished by rhythmic change and an added note at its inception; [i] is also a permutation of the pitches 3-7 of [g]. In addition, [i] is a retrograde of [a]. Motive [g] appears to equal [f] in diminution plus a permutation of [a].

The cumulative impact of this series of subtle relationships suggests that motive [i] may be the apex of linear affinity wherein the several thematic areas are related by means of their most prominent motives. Even without motives [d] and [i], thematic areas I and II are joined in the opening motive [g] of thematic area III.

Ex. 7:2 continued

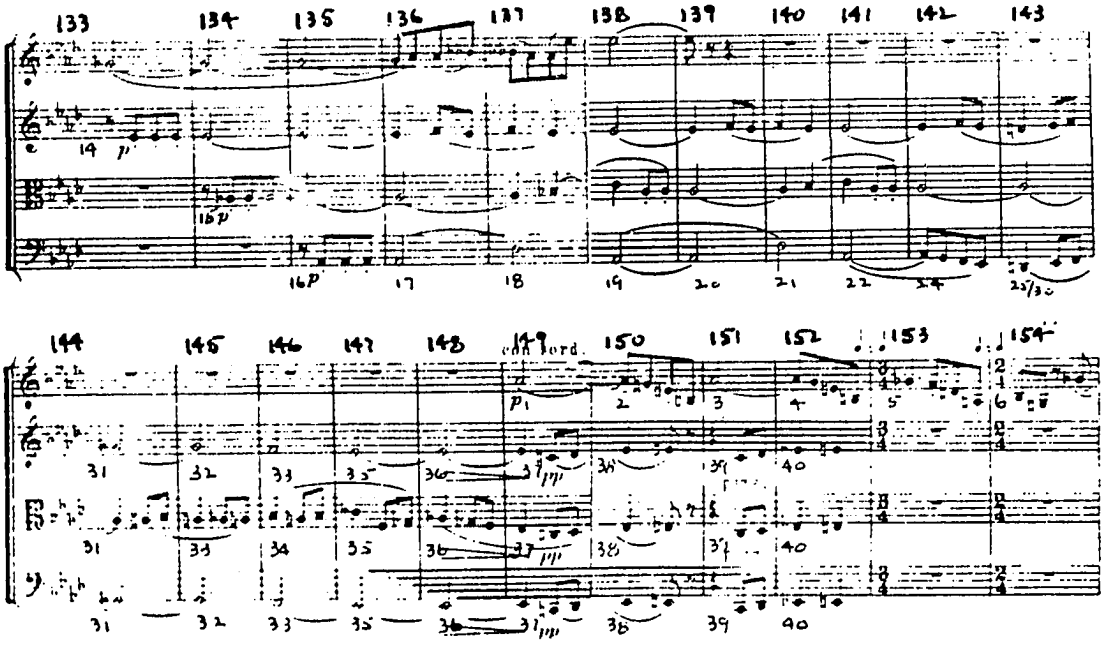
All motives which show an influence of the m2/M2/m2 scalar pattern as implied in motive [a] and crystallized in [d] will also exhibit the major/minor dichotomy.

RETRANSITION

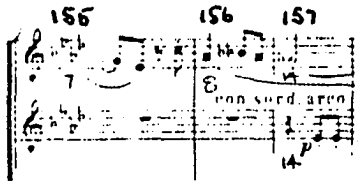


As noted, this sonata-type movement has no development section; however, there is a seven measure retransition which leads to the recapitulation section and a reverse order recurrence of the two themes of thematic area I. The linear details of this retransition are shown on the line score. By virtue of their position as the initial pitches of the sequence pattern, the circled notes form an anticipation of the whole tone scalar influence of motive [j].

THEME Ib

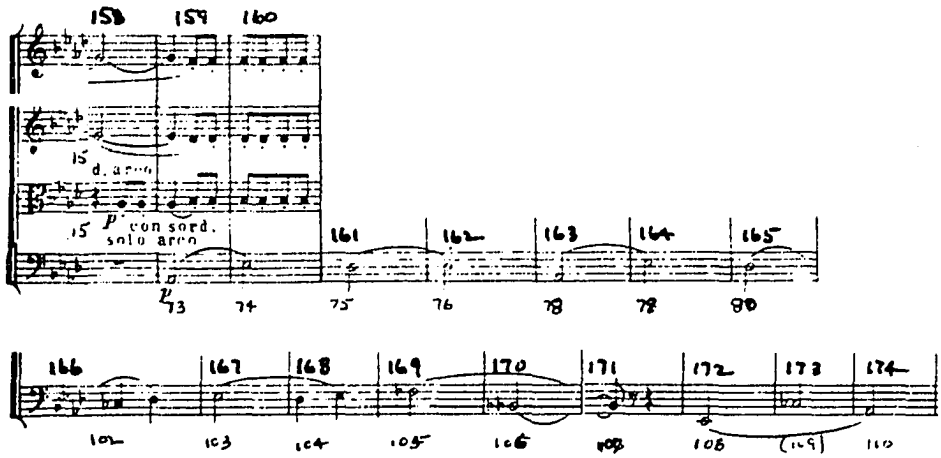


THEME Ib continued



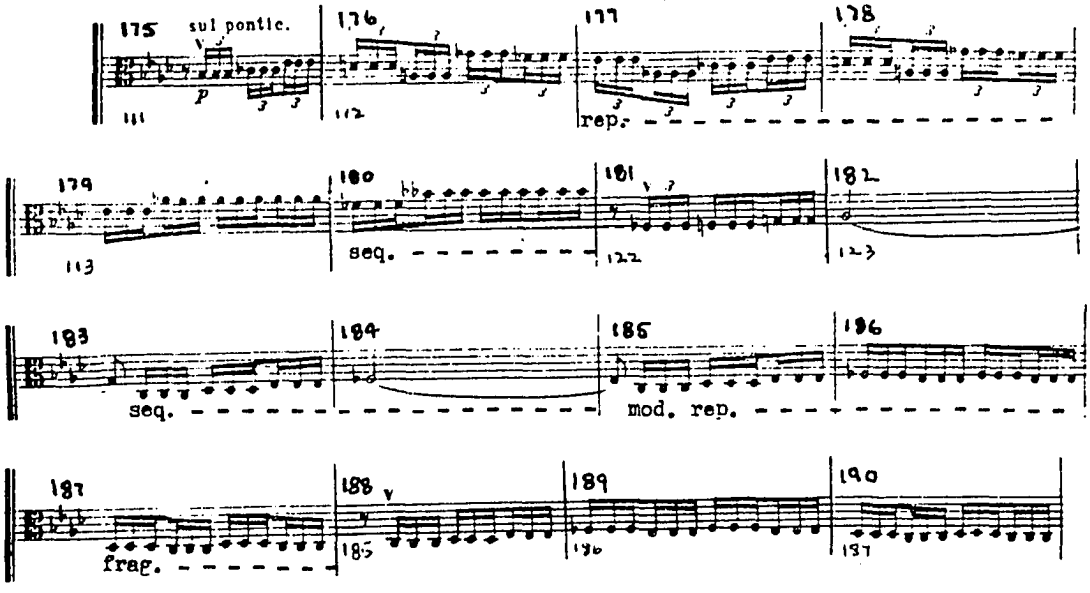
The recapitulation of themes Ib (m. 133-152) and Ia (m. 149-156) features the same motivic treatment observed in the original statements. Measures 157-158 form a bridge to the recapitulation of theme IIa and are derived from the texture of Ib (m. 14-15).

THEME IIa



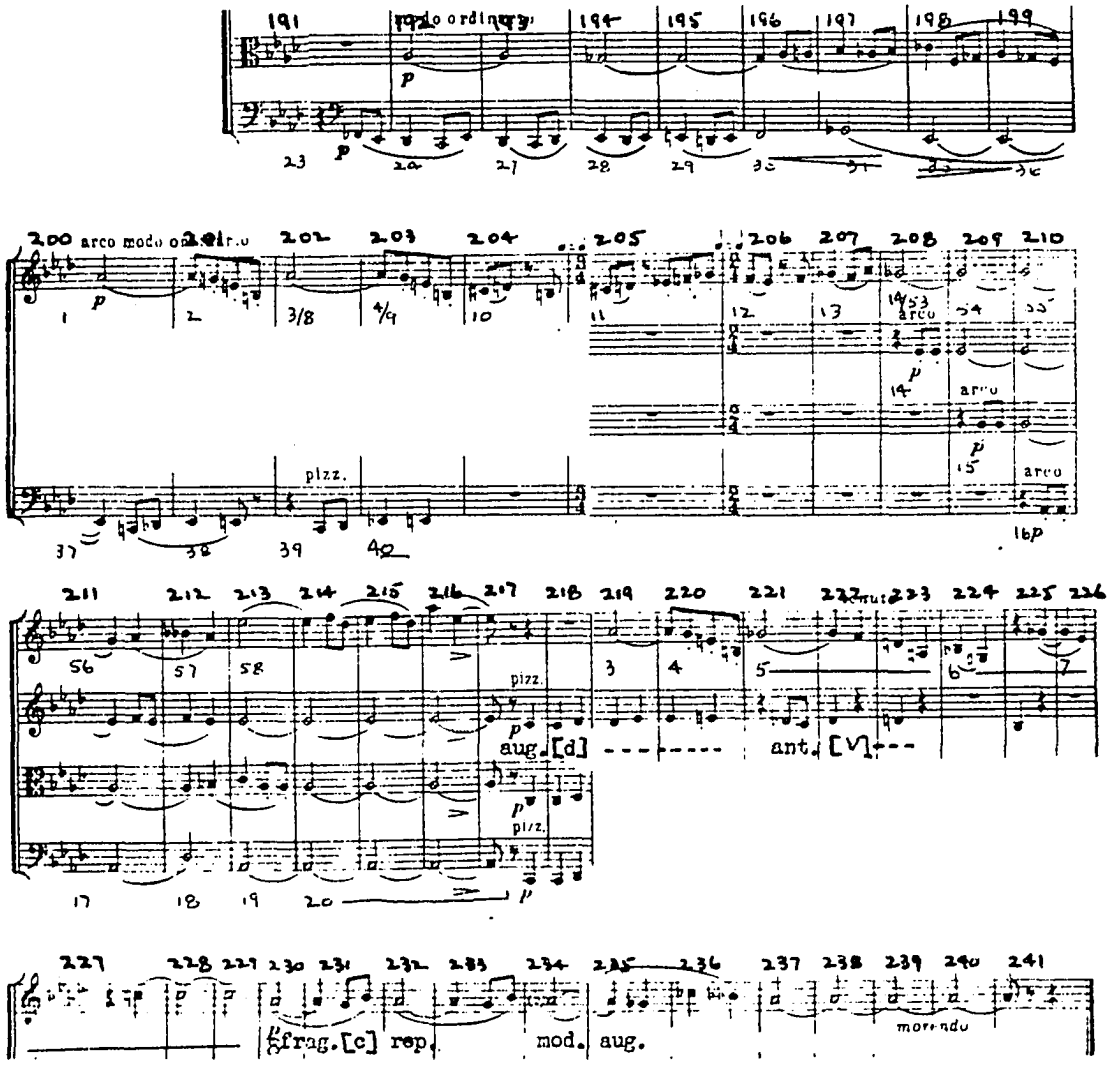
The only recurrence of theme IIa is at measures 159-174; it features the same motivic treatment observed in the original statement. This recurrence has been transposed to an $A^{\flat}$ tonal center to accommodate the sonata-type formal scheme of this movement.

THEME IIIa'



The recapitulation of theme IIIa is the most varied restatement of any theme examined thus far in this quartet. Motive [i] is given considerably more importance here: ten measures as opposed to four measures in the original statement. This increase in the prominence of [i] is important, for aural attention is called to the m2/M2/m2 scalar pattern. Because of its f^{b}(e)-f-g-a^{b} pitch level, this recurrence of [i] relates the more strongly to motive [a] which recurs at measure 200. This particular pitch level for the m2/M2/m2 scalar pattern will in retrospect be seen to exert far reaching influences upon the linear material and the vertical structures in movement two. As with theme IIa, IIIa recurs in A^{b} to accommodate the sonata-type formal structure of movement one.

CODA



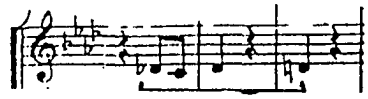
All three thematic areas having been treated to shortened recapitulation, a fifty-one measure coda (m. 191-241) closes the first movement. This coda is constructed from the principal motives of thematic area I. Measures 191-216 present nothing new in variation, transformation, or permutation of motives and themes. At measures 217-223 motives [a] and [d] are varied by augmentation to accomplish the expected depletion of energy at the conclusion of a movement.

The several overlappings of motives [a] and [d] in this movement have served to strengthen the major/minor dichotomy which they share. The augmentation applied to both motives at this point further strengthens this dichotomy which in turn influences the changing tone fragment of motive [c] at measures 227-241 ($c\text{-}a^{b}$ versus $c^{b}\text{-}a^{b}$).

In example 7:3 the first violin contour at measures 221-223 is viewed in retrospect as initiation of the emergence process which leads to motive [v] which is one of the most prominent sounds of movement four.

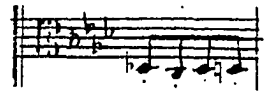
Ex. 7:3

Mvt. 1 (m. 221-223)



ant. [v]

Mvt. 4 (m. 2)

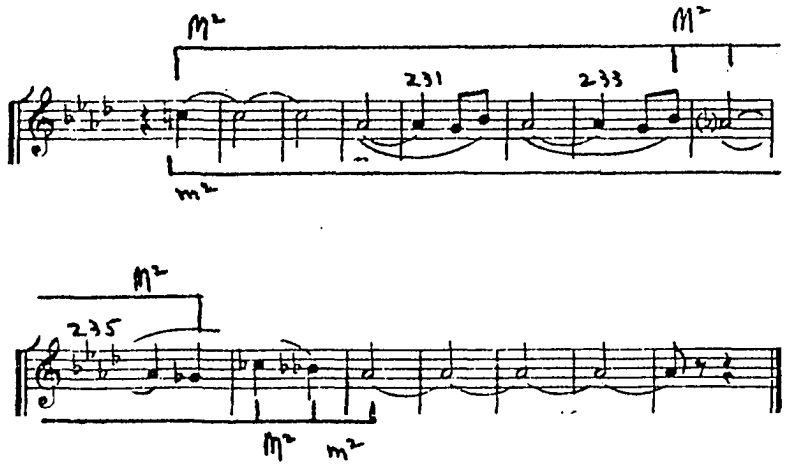


[v]

The closing measures of the first violin (m. 227-241) are shown in example 7:4. This contour contains the seven chromatic pitches from c down to g arranged in such a manner that they emphasize two different prominent descending scalar patterns. Both of these patterns rely on the opening c as their initial pitch.

Ex. 7:4

Mvt. 1 (m. 227-241)



The position and temporal span of the opening c gives this pitch aural prominence so that the tritone created by g^b at measure 235 is immediately apparent. The strength of the g^b in this pattern results from its unexpected sound following the g at measures 231 and 233. In this manner the pitches $c\text{-}b^b\text{-}a^b\text{-}g^b$ form an anticipation of the whole tone influence of motive [j] which is the first aural stimulus of movement two.

Immediately following the above pattern, aural attention is called to the c^b at measure 236 by virtue of its approach by leap. The opening c which still lingers in the aural memory is now joined with the $c^b\text{-}b^{bb}\text{-}a^b$ to emphasize the prominent m2/M2/m2 scalar pattern and the major/minor dichotomy of motive [a].

These measures are like so many others encountered by the analyst: their credibility is based on a strong aural effect rather than upon visual recognition.

Summary

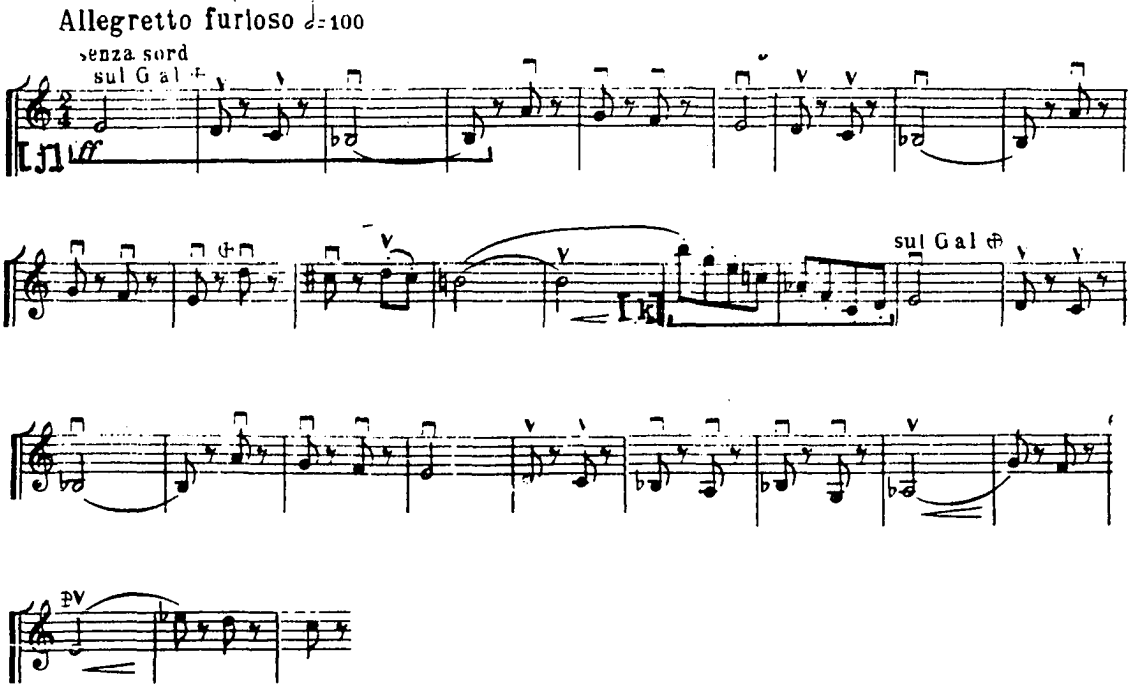
This investigation of the tenth quartet has shown thus far that the implied m2/M2/m2 scalar pattern of motive [a] and its attendent major/minor dichotomy are the most prominent influences at work in the linear material of movement one. In addition to motive [a], motives [d], [g], and [i] also exhibit these influences. Shostakovich capitalizes upon the major/minor dichotomy by emphasizing alternately the major and the minor third of his linear material; this procedure was vividly illuminated in the closing measures. In addition, the staccato eighth notes of motive [a] also serve a unifying function; this investigation has shown that they are prominent in all three thematic areas. A false expectation for an e tonic has been observed as a prominent characteristic of motive [a]. This false expectation appears to have influenced the selection of E as the tonal center of movements two and three.

As a pervasive influence of the entire first movement it is noted that the basically conjunct motion and limited range of the prominent motives combine with generally low tessitura, subdued dynamics, and simple rhythmic patterns to create an impression of calm, unhurried motion.

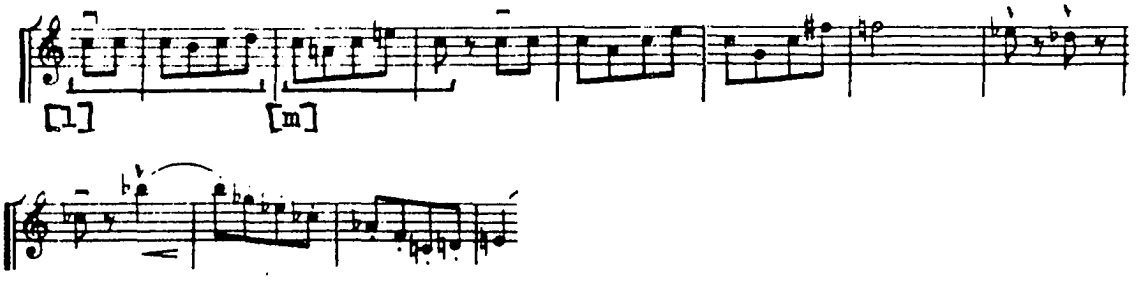
THEMATIC INDEX

Tenth Quartet
Movement Two

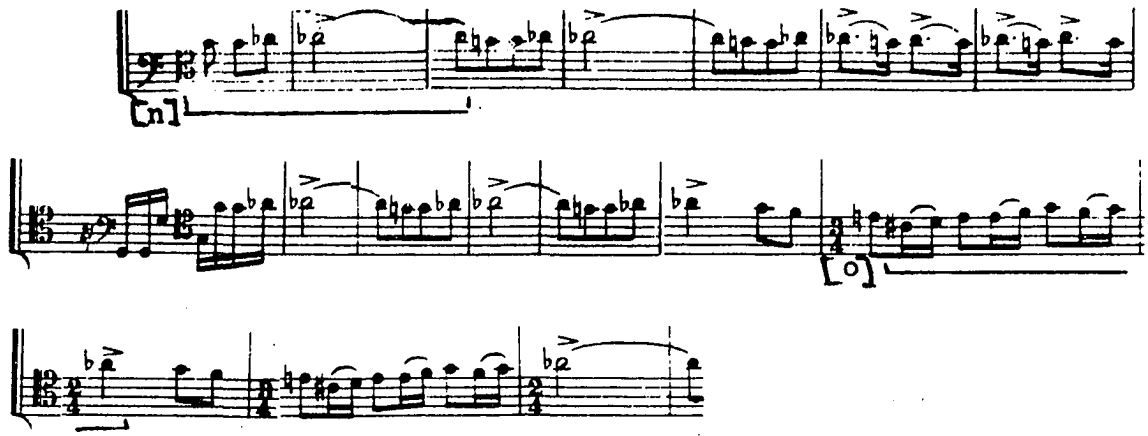
THEME Ia



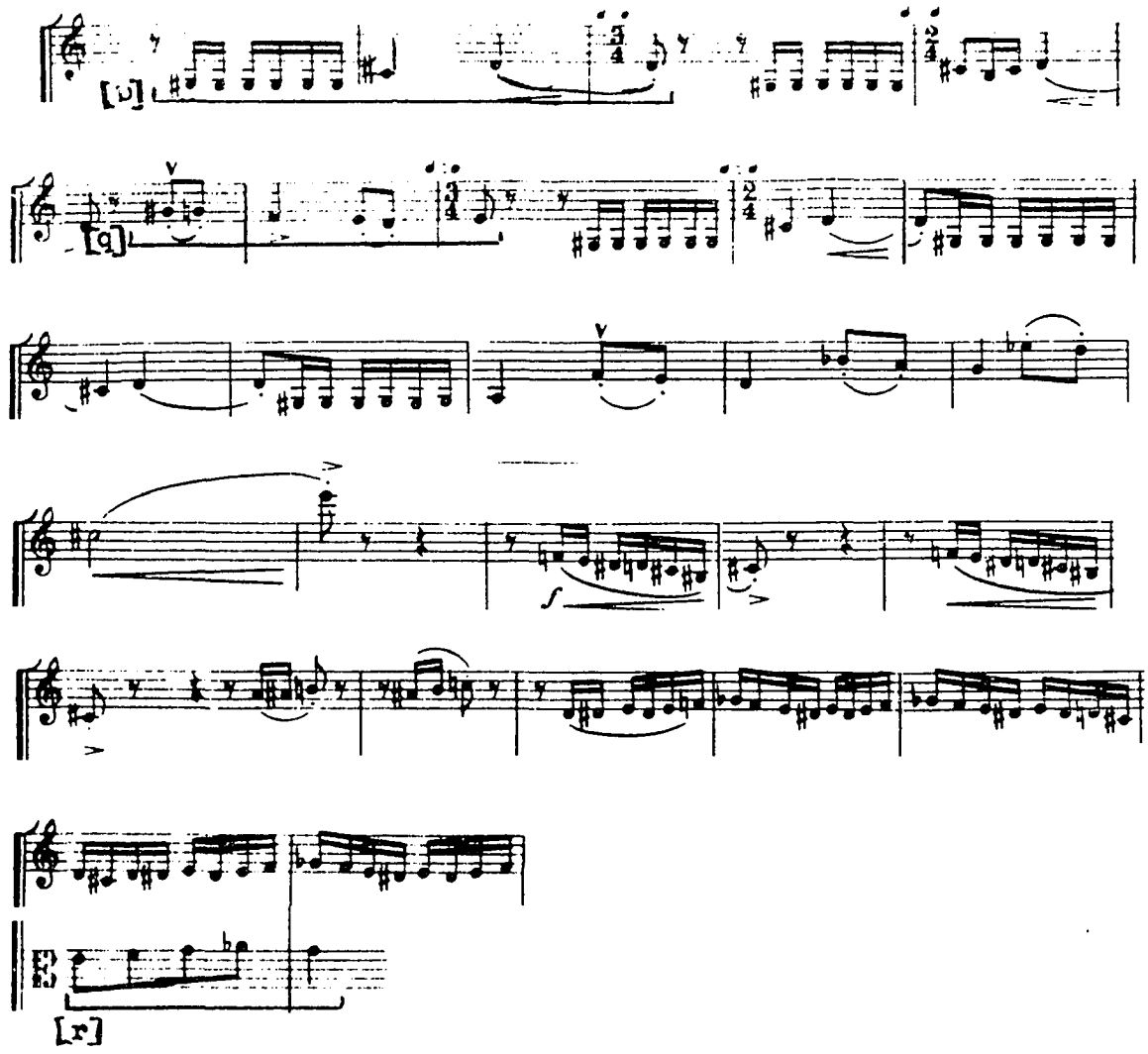
THEME Ib



THEME IIa



THEME IIb



GRAPHIC ANALYSIS OF FORMAL STRUCTURE

Second Movement — Allegretto furioso - E - Rondo - 347 measures - $\frac{2}{4}$ meter.

Thematic Area I

a	b	a	b'
1	31	41	72
E:	F:	E:	F:

Thematic Area II — retransition

a	b	a'	[l]	[m]	[q]	[r]
82	109	163	186			
A^b:	C#:	B^b:				

Thematic Area I'

a/b*
196
E:

Thematic Area II' — retransition

a	[n]	[l]	[m]	[q]
227	241			

Thematic Area I''

a/b/IIa*
258
E:

* indicates that the themes are presented simultaneously, usually in vertical combination.

Several of the prominent characteristics of motive [a] are apparent in movement two.

1. The selection of an E tonal center for this movement represents a temporary capitulation to the E tonal expectations created by motive [a].

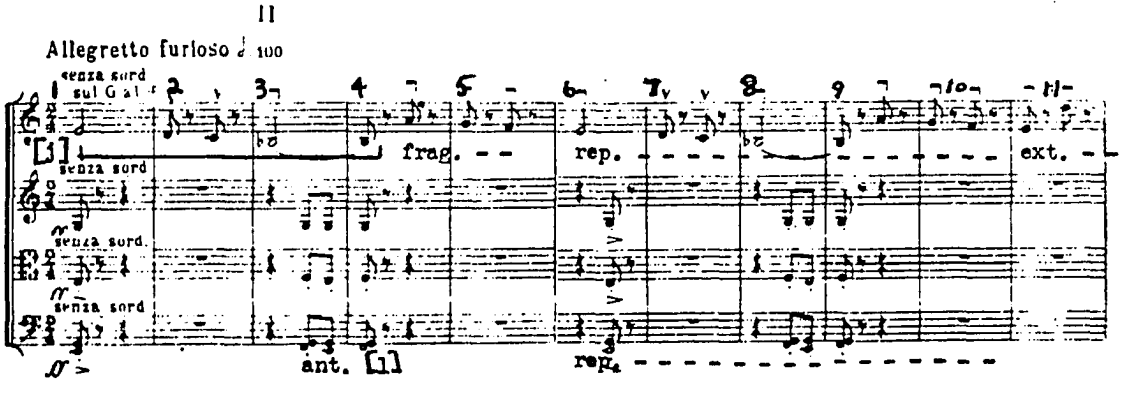
2. The horizontal interval created in moving from the tonal center of movement one to the tonal center of movement two ($a^b(g\#)$ - e) is opposed by the first vertical structure of movement two: e - g (m. 1). Thus the major-minor dichotomy of motive [a] is immediately emphasized.

3. Motives [o], [q], and [r] capitalize on the m2/M2/m2 scalar pattern crystallized by motive [d].

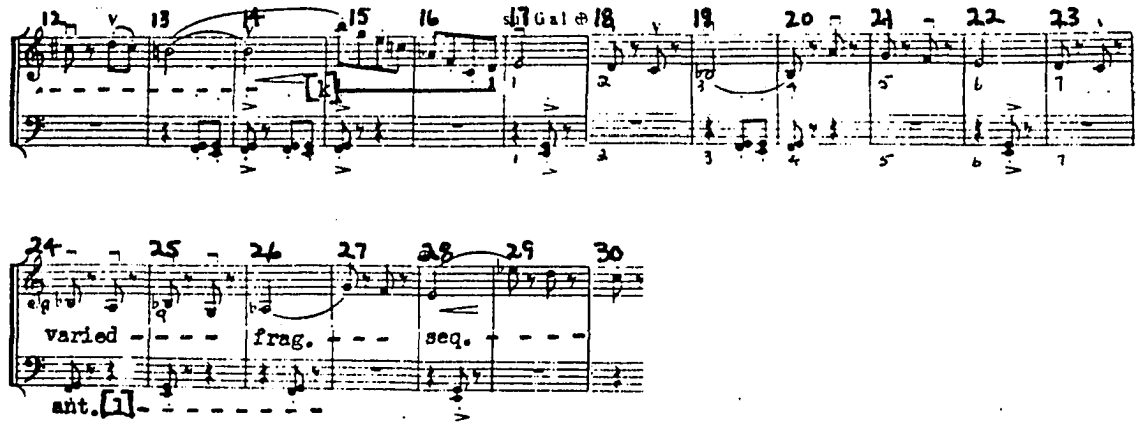
4. The m2/M2/m2 scalar pattern emerges most prominently in an a^b-e pitch frame.

The obvious whole tone influence of motive [j] provides a bold contrast to the chromaticism of much of the linear material of movements one and three. Anticipation of the descending whole tone pattern of [j] appears three times in the detailed investigation of movement one: measures 47-51 (p. 315), measures 126-133 (p. 319), and measures 227-235 (p. 324). These anticipations are summarized under the Processes of Anticipation and Emergence on pages 423-424.

THEME Ia

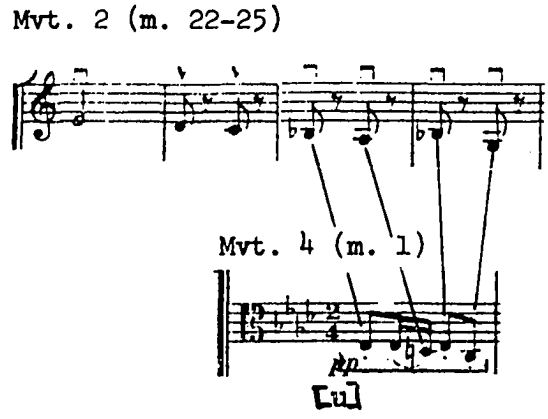


THEME Ia continued

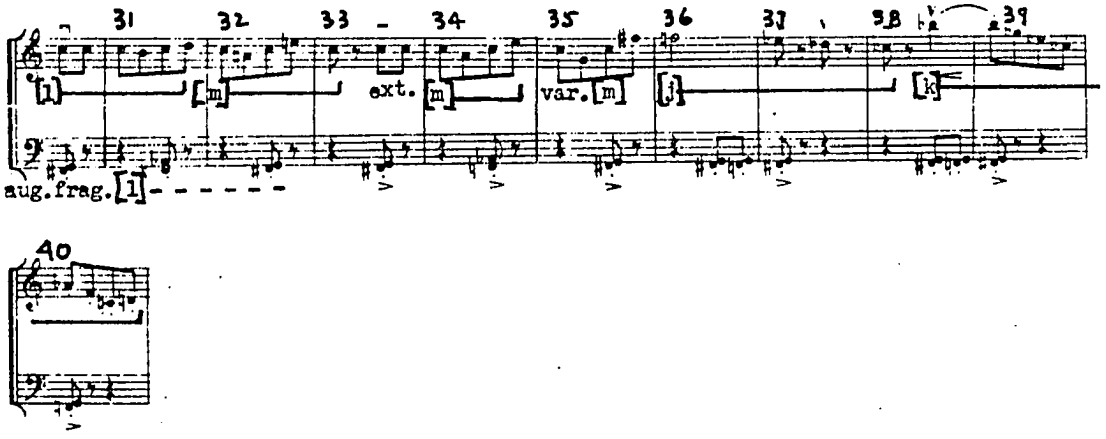


The principal line of theme Ia (m. 1-30) as stated sul G by the 1st violin grows primarily from the opening whole tone pattern of motive [j]. The half-step accompanimental figure in the lower three instruments (m. 3-4) anticipates the lower neighbor of motive [l] (m. 30-31). Motive [k] (m. 15-16) is an arpeggiated f minor eleventh chord. As shown in example 7:5, the varied portion of [j] at measures 24-25 may in retrospect be seen to initiate the emergence process which leads to motive [u] of movement four.

Ex. 7:5



THEME Ib RETRANSITION

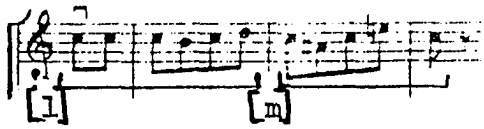


The single five measure phrase of theme Ib is followed by another five measure phrase which leads back to a recurrence of theme Ia (m. 41-71). Motive [j] of the retransition attends to its original whole tone pattern while the first four notes of the varied recurrence of [k] (m. 38-40) bear accidentals which suggest an influence of the alternating scalar pattern. Except for the initial $\underline{b^b}$ all pitches of this varied [k] subscribe to an alternating pattern constructed from the lowest pitch $\underline{c}$: c-d-e^b-f-g^b-a^b-(a)-b/c^b.

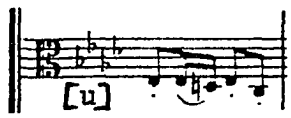
Most of the motives examined thus far have been constructed of either stepwise or triadic patterns; motives [l] and [m] are no exception. The combined contour of these two motives contributes to the emergence process of motive [u] as shown in example 7:6.

Ex. 7:6

Mvt. 2 (m. 30-33)



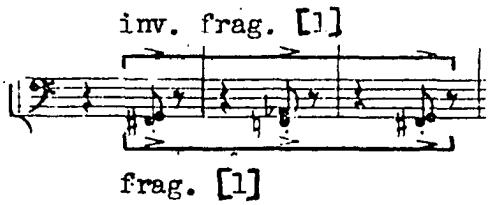
Mvt. 4 (m. 1)



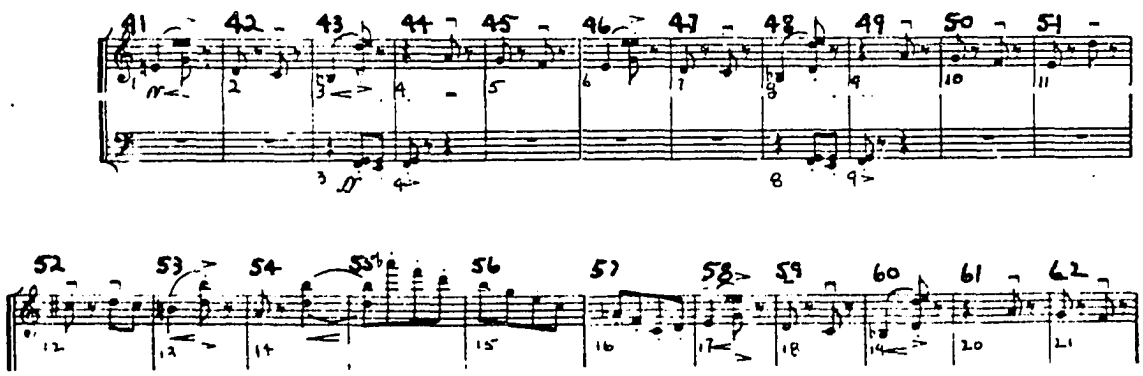
The vertical structures in the lower three voices which accompany theme Ib are formed from the same neighbor tone fragment of motive [1] which accompanied theme Ia (m. 3-4 and 24-26). This fragment occurs here in both original and inverted form as shown in example 7:7.

Ex. 7:7

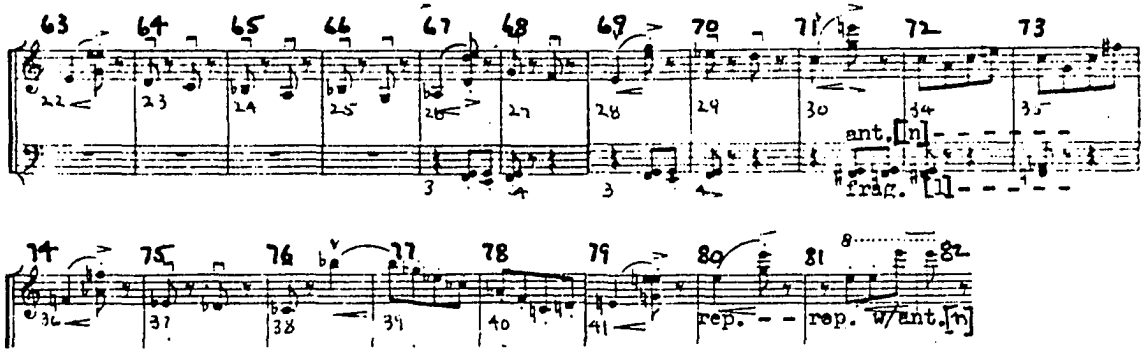
Mvt. 2 (m. 30-32)



THEME Ia



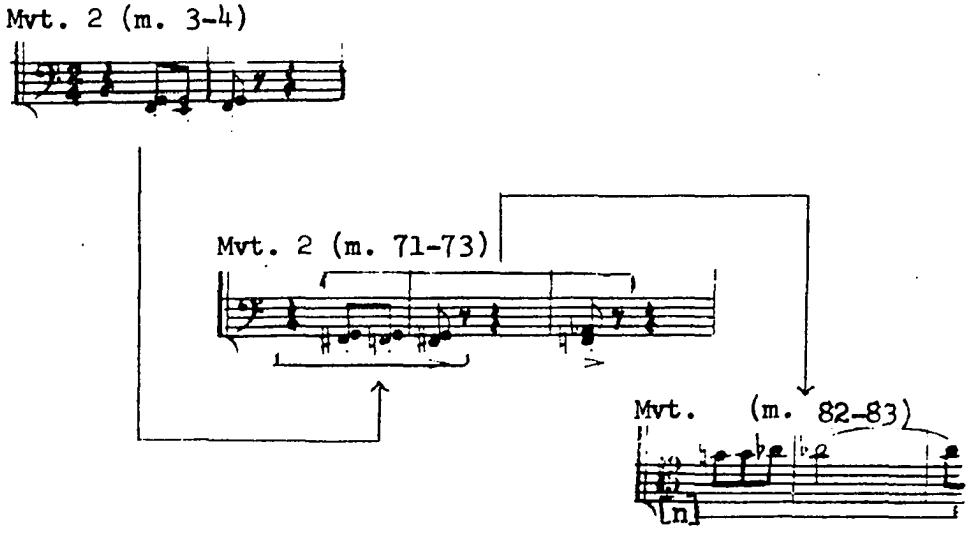
THEME Ia continued THEME Ib'



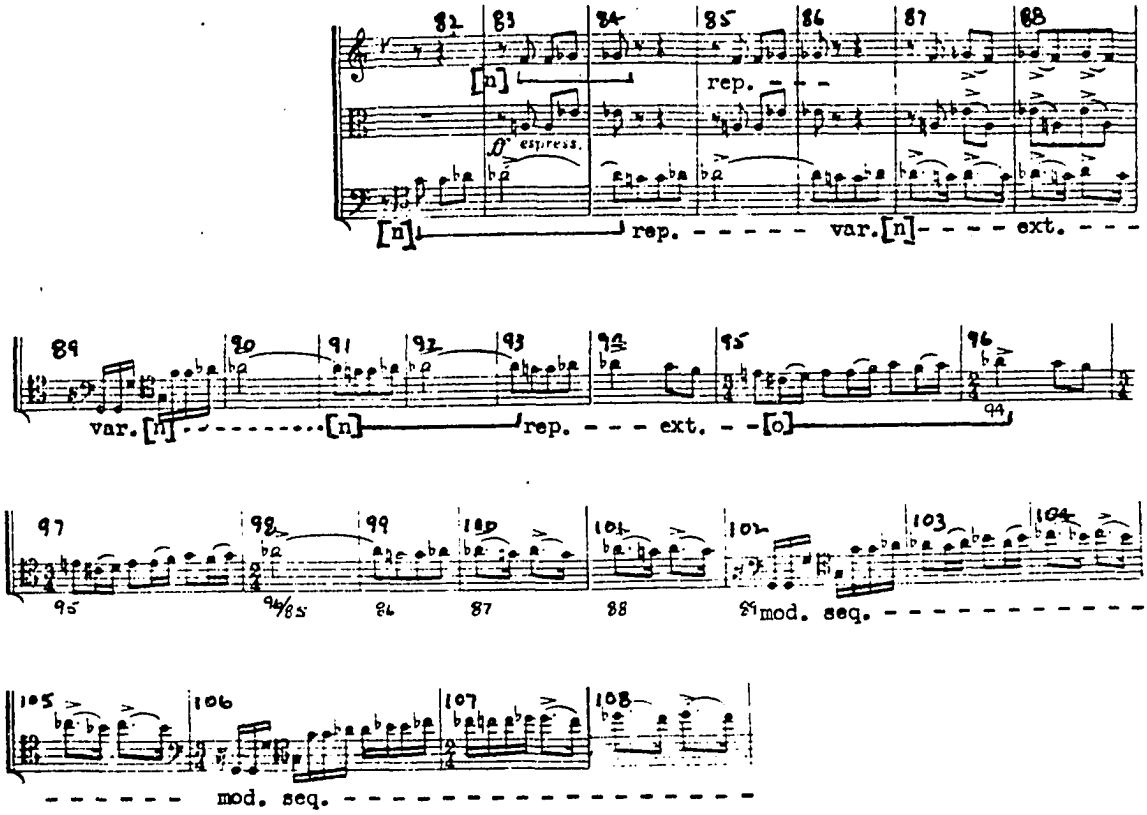
The first recurrence of theme Ia (m. 41-71) is a complete return of the original statement (m. 1-30) with one measure inserted between the original measures 14-15. This insertion is an upward extension of the tertian structure of motive [k] (m. 15-16).

The details of the first recurrence of theme Ib may be observed on the line score. As shown in example 7:8, the double stop figure by viola and cello at measures 71-73 suggests that the accompanimental fragment of motive [l] from measures 3-4 is used here in vertical combination with an anticipation of [n].

Ex. 7:8



THEME IIa



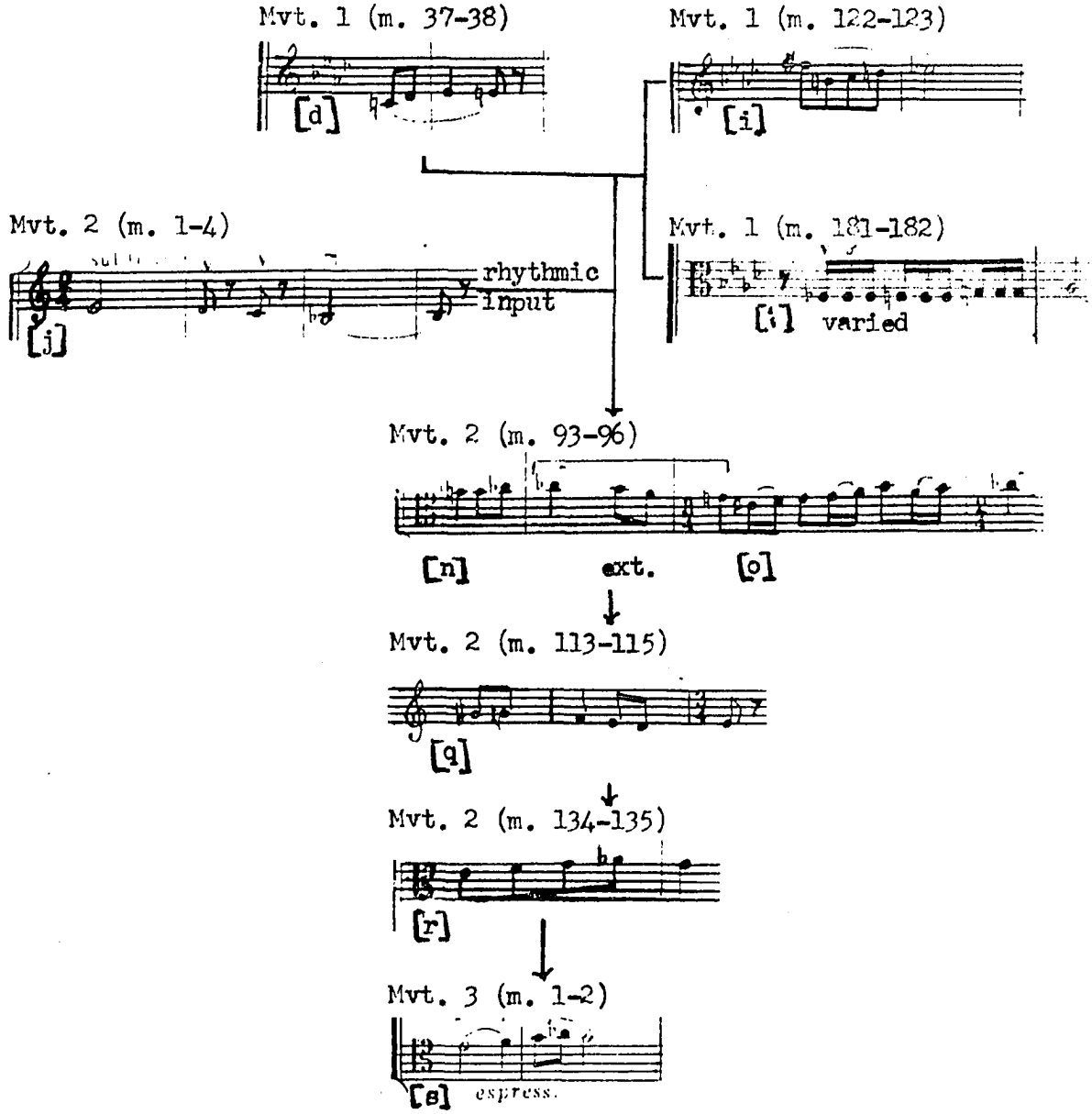
The principal characteristic of theme IIa (m. 82-108) is the repetition of the half-step g-a^{b} of motive [n] (m. 82-83). The imitation of [n] by the second violin at measures 83-88 anticipates the canons which appear in future recurrences of theme IIa; even the viola suggests motive [n] with intervallic expansion. The extension of motive [n] at measures 94-95 strongly suggests a diminution of [j] (m. 1-3) whose original whole tone scalar pattern has been replaced by the prominent m2/M2/m2 scalar pattern.

The repetition and recurrence techniques of measures 95-108 are shown on the line score. Measures 102-108 create the aural effect of sequence by virtue of the ♩. ♪ rhythmic pattern which is

heard first at an a^{b}-g pitch level at measures 100-101, c^{b}-b^{b} at measures 104-105, and finally at d^{b}-c at measures 107-108.

The apparent influence of the four note m2/M2/m2 scalar pattern upon motive [j] has been observed at measures 94-95. Example 7:9 summarizes the emergence and growth of this prominent pattern within an a^{b}-e pitch boundry.

Ex. 7:9



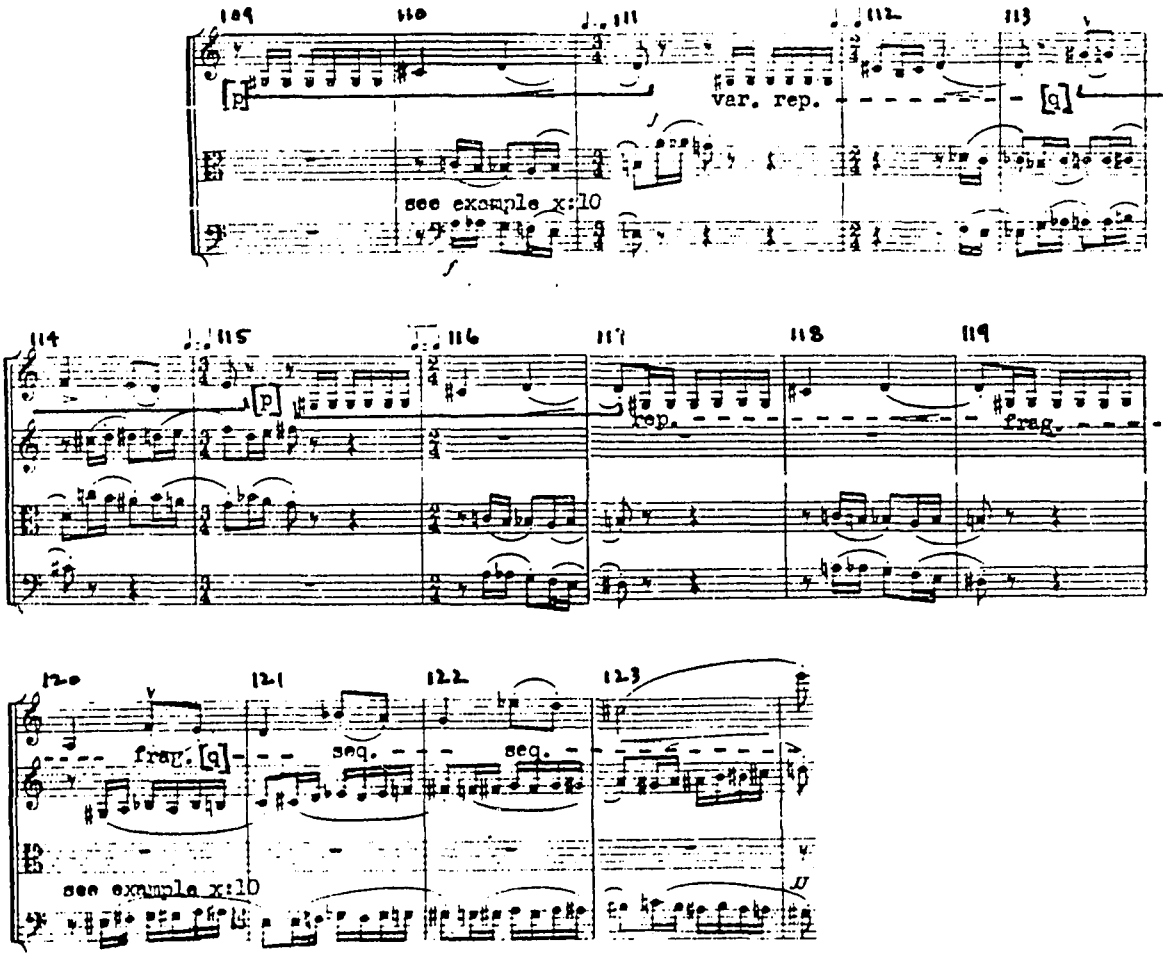
> The m2/M2/m2 scalar pattern occurs in an e-a^b pitch frame for the first time at measures 181-182 of movement one (varied recurrence of [i]). This pitch frame is strengthened by the A^b and E tonal centers of the two movements. The first eighty-one measures of movement two emphasize the pitch e. At measure 82 motive [n] begins its relentless reiteration of g-a^b.
>
> All four pitches (a^b-g-f-e) of the m2/M2/m2 scalar pattern within the a^b-e pitch frame are introduced at measure 94 of movement two as an extension of motive [n]. This pitch frame is immediately inverted to form the ascending contour of motive [o] at measure 95. Measures 94-95 are immediately repeated to impress the a^b-g-f-e pitches more firmly upon the aural memory.
>
> Motive [q] (m. 113-115) continues the emphasis of the m2/M2/m2 pattern at the a^b-e pitch frame. Motive [r] (m. 133-135) assumes the exact contour of [s] which is the source motive of the passacaglia theme of movement three.
>
> Further comparison of measures 93-95 with motive [r] shows that not only is the pitch level being established for the final metamorphosis of the m2/M2/m2 scalar pattern in motive [s], but motive [n] and its extension at measures 93-95 are a retrograde of the contour of motive [r].

The aural events just described in example 7:9 attest to the importance of [a] as a germ motive which exercises far-reaching influences upon linear material, vertical structures, and tonality. Movement two is viewed as a continuing manifestation of motive [a] and, as this investigation has already suggested, a vital link in the chain of aural events which lead to motive [s] and the passacaglia theme of movement three.

Further support for these aural events is found in the fact that the first three pitches of motive [a] (a^b-g-e) outline three of

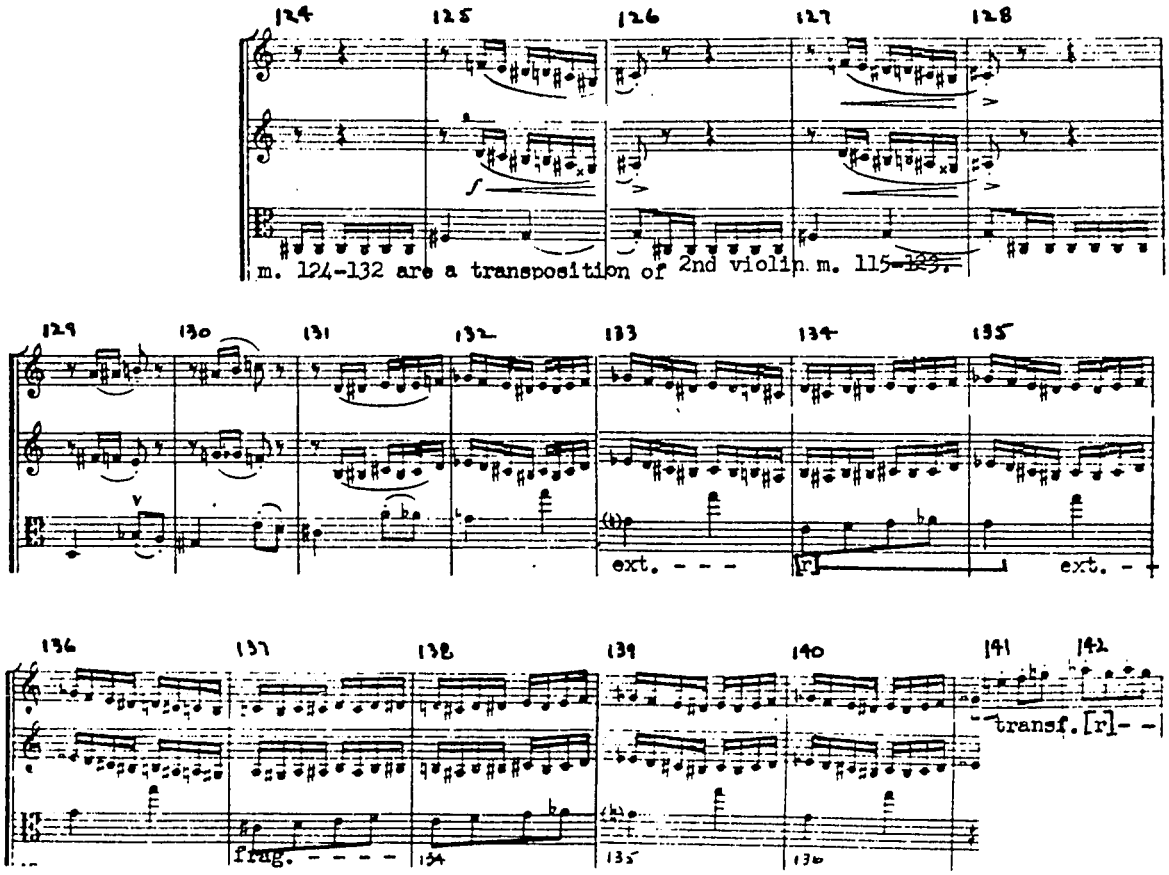
the four pitches of the m2/M2/m2 pattern which later takes shape within the a^b-e pitch frame; motive [a] is also accommodated within an alternating pattern constructed from the A^b tonal center of theme Ia (a^b-b^b-b-c#-d-e-f-g).

THEME IIb



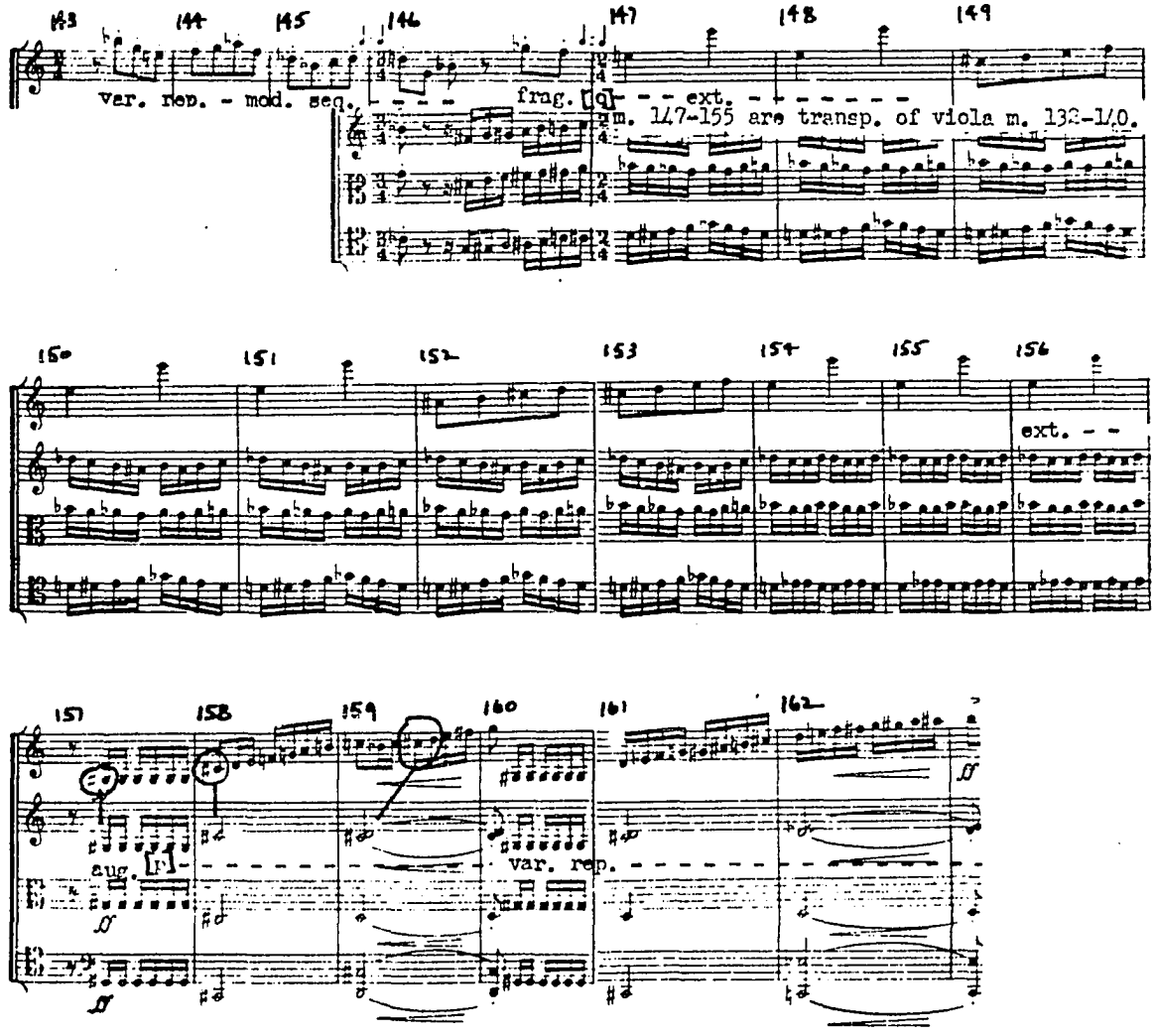
A number of influences from theme IIa are at work in IIb (m. 109-162). The sixteenth note anacrusis figure of motive [p] (m. 109-110) has been prepared by the varied recurrence of [n] at measure 89. The prominent half-step of [p] relates that motive to [n]. The remaining details are displayed on the line score.

THEME IIb continued



Except for the transformation of motive [r] at measures 141-142 no new techniques of motivic manipulation are displayed in the principal linear material of measures 124-142. The importance of the role of motive [r] to the emergence of both the contour and the pitch level of [s] has been disclosed in example 7:9 (pp. 335-336). Example 7:9 has shown that all of the motives which display the m2/M2/m2 pattern may be viewed as a series of continuing transformations of but one basic pattern which reaches its goal in motive [s] of the passacaglia theme of movement three.

THEME IIb continued



The details of measures 143-163 are shown on the line score. No new techniques of motive manipulation are noted in the primary linear material.

Beginning in the three lower instruments at measure 109 (p. 337) the subsidiary lines of theme IIb are subjected to a process of continuous metamorphosis; both rhythm and contour are involved. The rhythm begins at measure 110 with the ♩♫ pattern of motive [o], changes to ♫ ♬ | ♪ at measures 120-128, and moves to continuous eighth

notes at measure 131; meanwhile the pitch selection becomes increasingly chromatic.

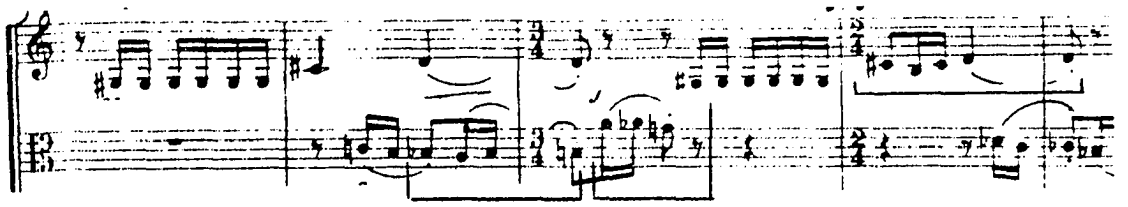
At measures 110-111 ten chromatic pitches are divided among the three lower voices; at measures 112-115 all twelve chromatic pitches are divided among these subsidiary voices. At measures 120-123 the cello assumes all twelve chromatic pitches and at measures 146-156 all three lower instruments display totally chromatic movement with all twelve tones in the cello and eight of the twelve tones in each of the other two instruments.

Throughout this chromaticism in the subsidiary voices the primary melodic line emphasizes an alternating scale from the C# tonal center: c#-d-e-f-g-a^b-b^b-b. The primary line deviates from the alternating pattern at measures 120-123, 129-131, and for the pitches c and g^b at measures 145 and 146 respectively. What develops here is a struggle for supremacy between chromaticism and the alternating pattern. The continuing analysis will show that the alternating pattern eventually dominates both the linear material and the vertical structures of the closing portion of this movement.

Initiation of the emergence process which leads to motive [v] of movement four has been observed in movement one. This contour is stated many times at various pitch levels in theme IIb and its subsidiary lines; several illustrations are shown in example 7:10.

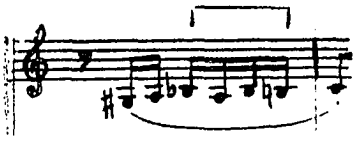
Ex. 7:10

Mvt. 2 (m. 109-113)

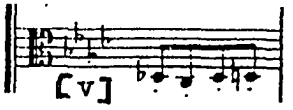


retrograde

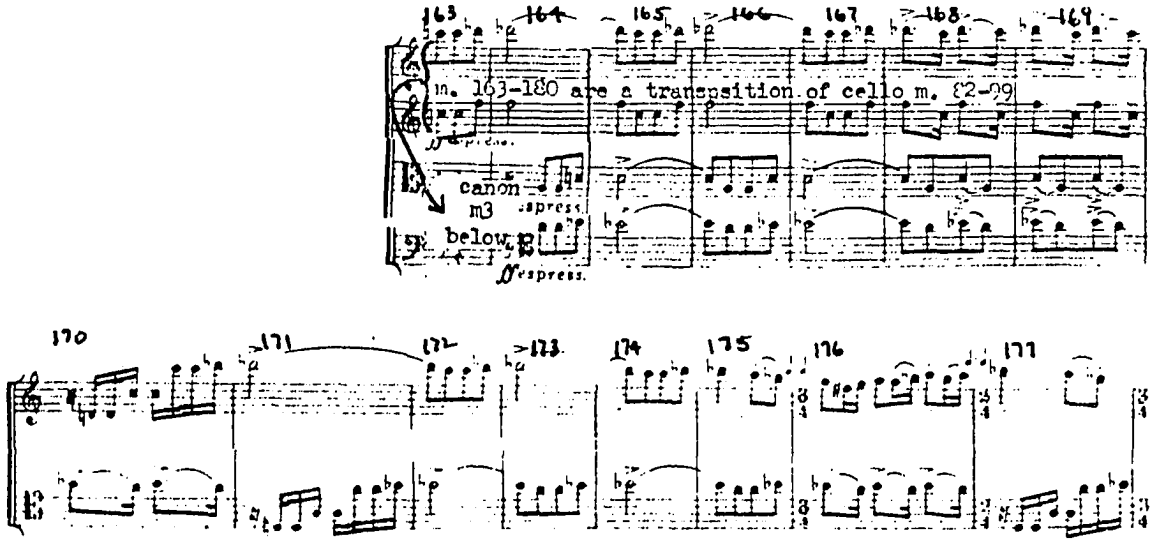
Mvt. 2 (m. 120)



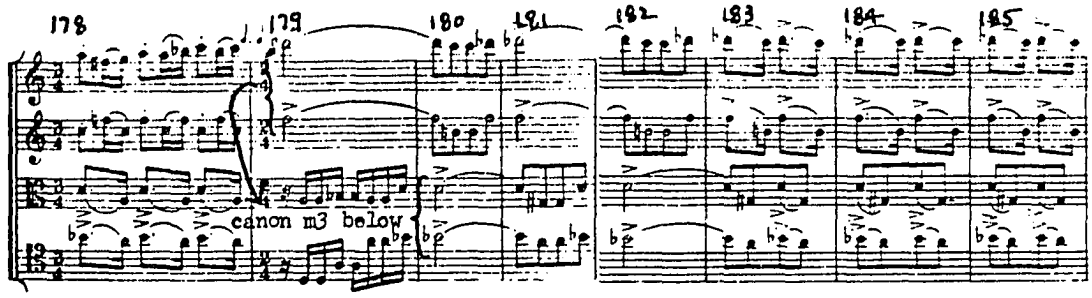
Mvt. 4 (m. 2)



THEME IIa'

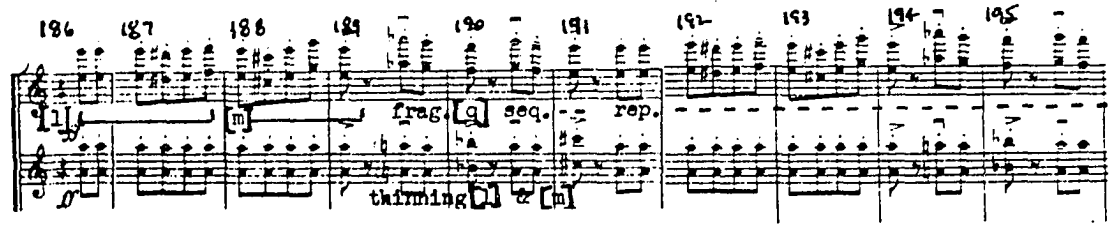


THEME IIa' continued



Theme IIa returns at measures 163-185 as a canon at the minor third below. Acting as leader, the 1st violin presents the original cello statement of theme IIa (m. 82-101) transposed up a perfect fourth. The cello enters as follower at measure 164 at the interval of a minor third below. The canon is broken momentarily at measures 176-178 with the 1st violin and cello resuming their leader-follower relationship at measures 179-185.

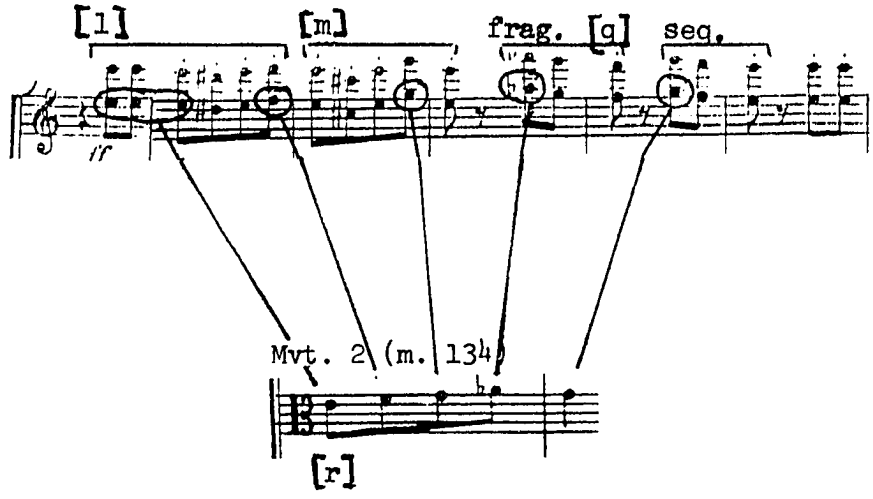
RETRANSITION



Measures 186-195 act as retransition to the recurrence of theme Ia at measures 196-227. As may be observed on the line score, this retransition is constructed of motives from themes Ib and IIb. Example 7:11 shows that manipulation of these motives in the first violin effects a subtle filling of the contour of motive [r].

Ex. 7:11

Mvt. 2 (m. 186-191)

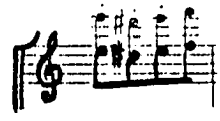


By lowering the final pitch of motive [l] as well as the penultimate pitch of [m] and following this with a fragment of motive [q], the first violin has effected a subtle filling of the contour of [r]. At the same time this contour tenaciously holds to its relationships with its original motivic sources.

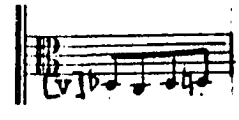
The half-step lowering of the final pitch of motive [l] at measure 187 now contributes to the emergence process of motive [v] as shown in example 7:12.

Ex. 7:12

Mvt. 2 (m. 187)



Mvt. 4 (m. 2)



Meanwhile, the second violin at measures 189-191 suggests a thinning of motives [l] and [m] as shown in example 7:13.

Ex. 7:13

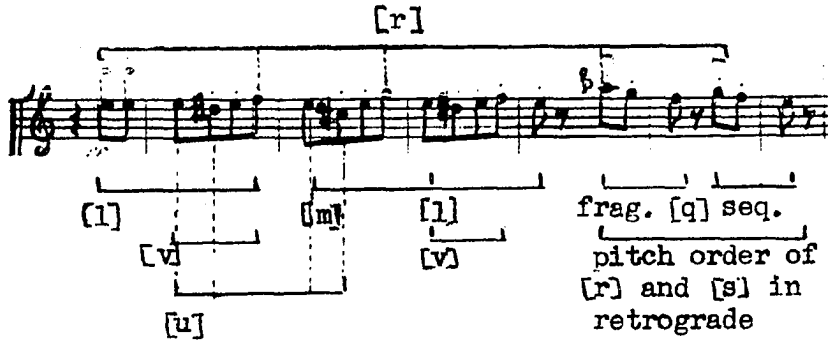
Mvt. 2 (m. 30-33)

Mvt. 2 (m. 189-191)

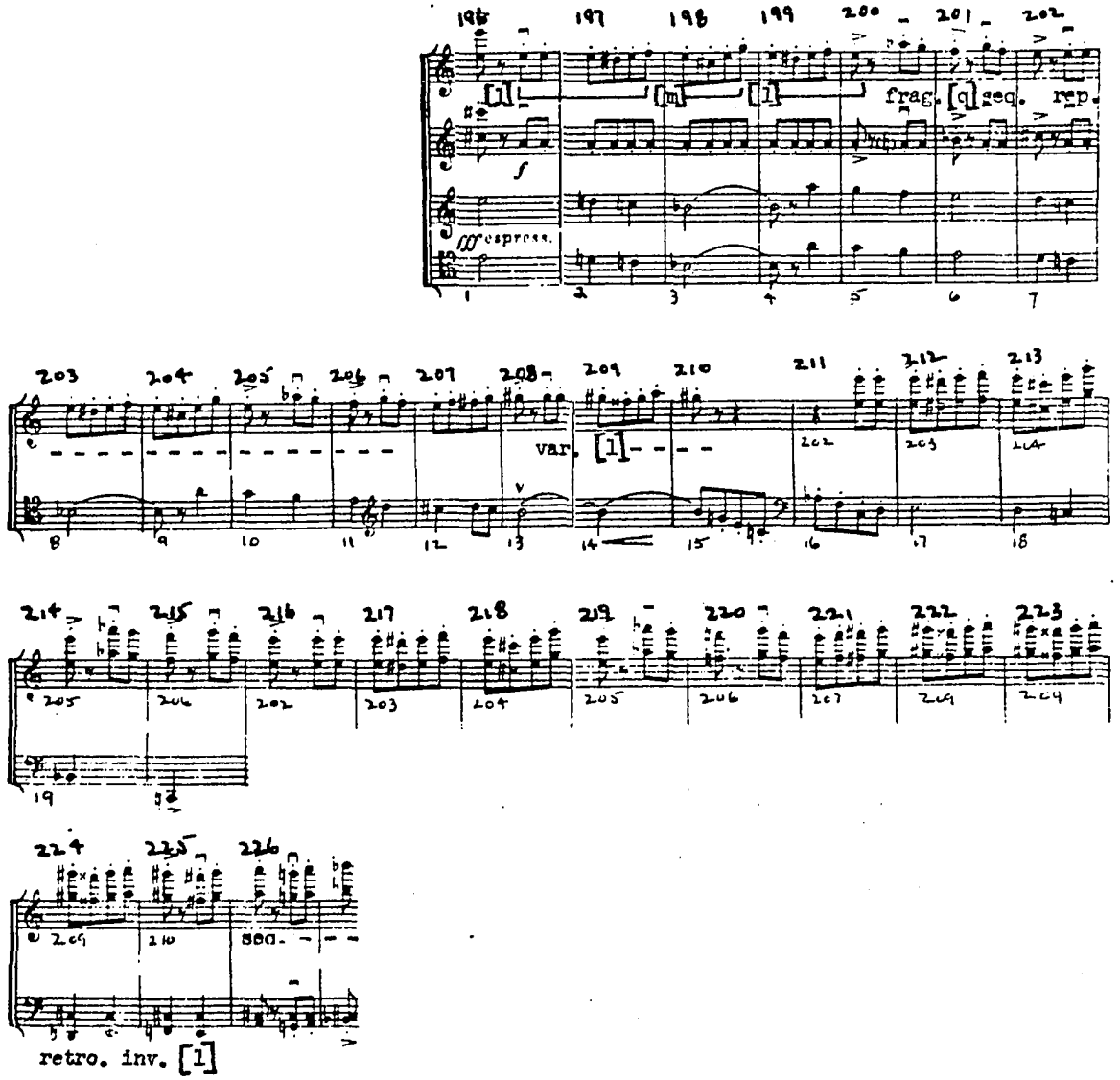
As the first violin continues its repetition of motives [l], [m], and the fragment of [q], a complex pattern of motivic influences and contributions to the emergence process of [u] and [v] may be observed in example 7:14.

Ex. 7:14

Mvt. 2 (m. 196-202)

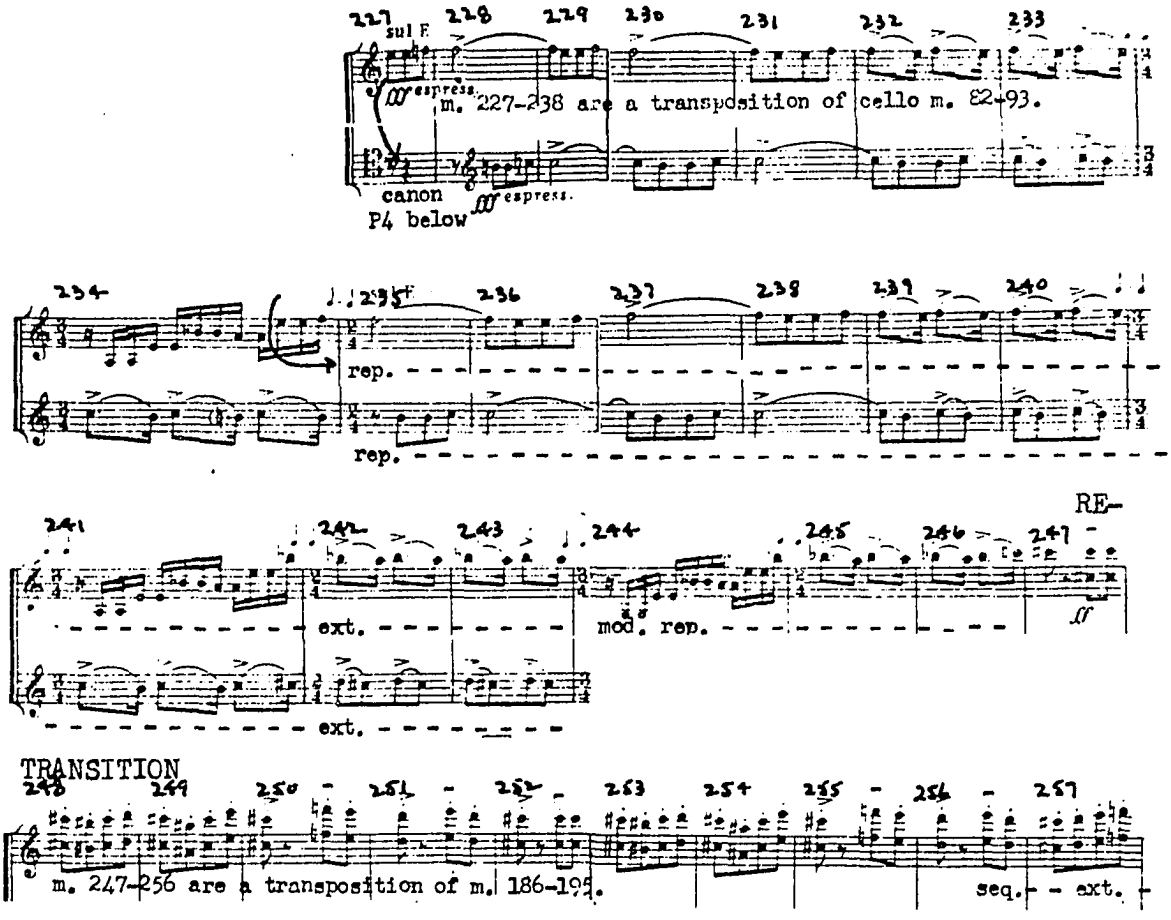


THEME I' (a/b)



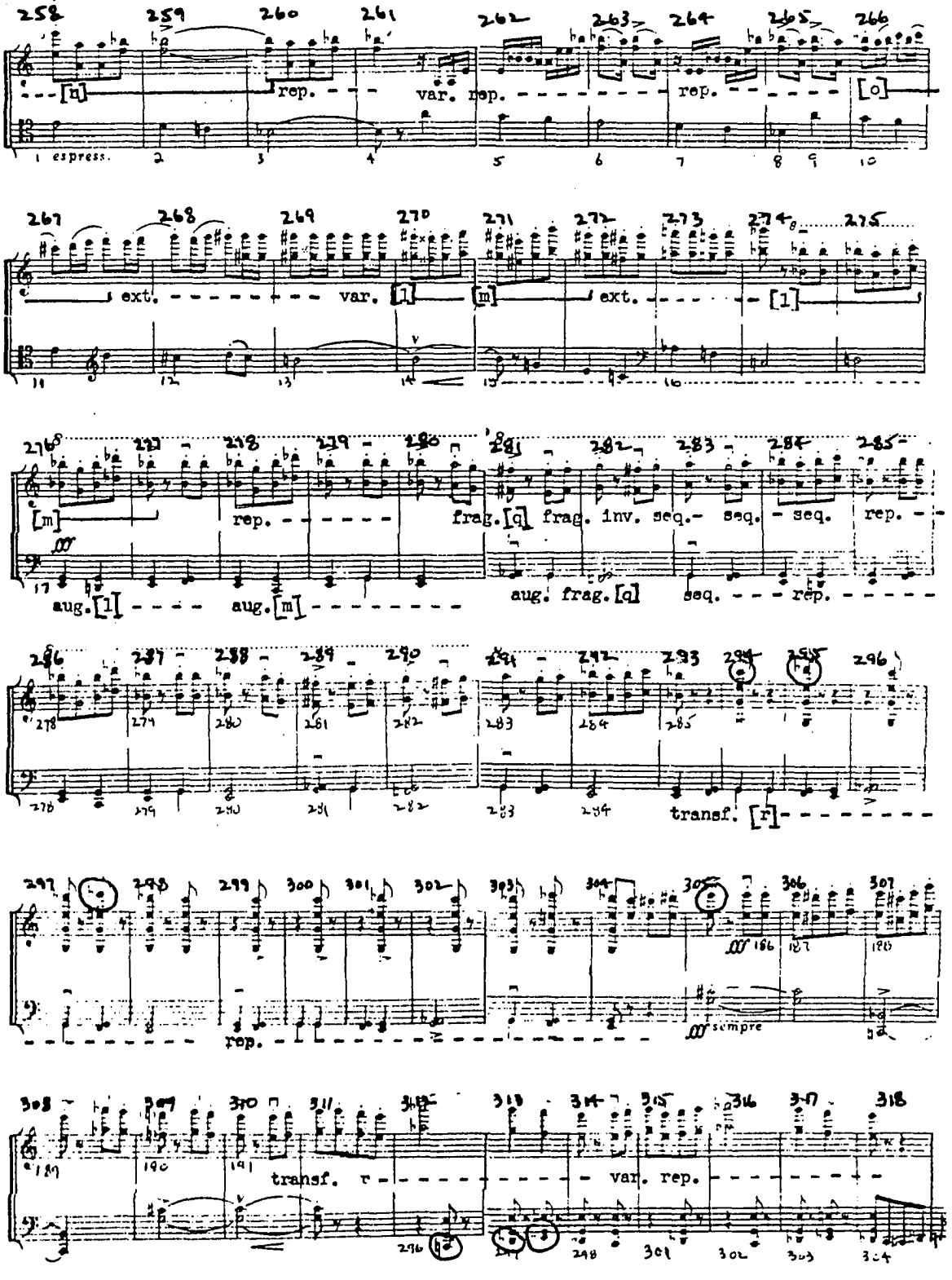
Measures 196-227 are a recurrence of theme Ia in vertical combination with motives [l], [m], and [q] which continues the motivic patterns already established by the first and second violin in the preceding retransition. The details of this restatement may be observed on the line score.

THEME IIa'



Theme IIa returns in the first violin at measures 227-247 with a cello entrance at measure 228 in canon a perfect fourth below; this canon ends at measure 241. Measures 247-257 are a retransition to a recurrence of theme Ia at measures 258-304.

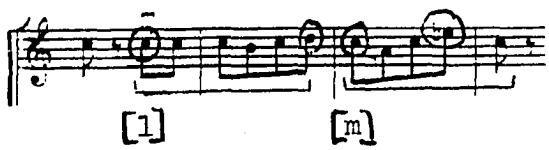
THEME I'' (a/b/IIa)



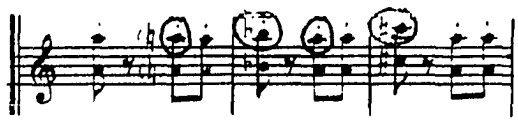
The cello line at measures 258-275 is a varied recurrence of measures 1-16 of the original statement of theme Ia. The cello line at measures 276-284 is an augmentation of the first violin at measures 187-191. Throughout this recurrence of theme Ia, the first violin maintains a steady commentary of motives from themes Ib, IIa, and IIb. At measures 294-305 the top-most pitches of the first violin multiple-stops display the m2/M2/m2 scalar pattern. Example 7:15 shows the heredity of this contour in motives [l] and [m].

Ex. 7:15

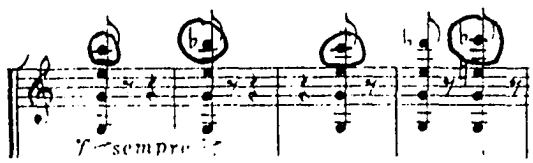
Mvt. 2 (m. 30-33)



Mvt. 2 (m. 189-191)



Mvt. 2 (m. 294-297)



The ear is very much alerted to the familiar sound of measures 293-304 in the cello. An investigation of the linear material of movements one and two reveals that this contour (m. 293-304) bears a striking resemblance to the first violin line at measures 11-15 of the

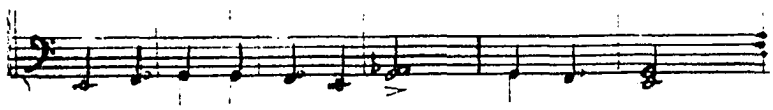
first movement and to the first violin line at measures 196-202 of the second movement. These contours are shown in example 7:16.

Ex. 7:16

Mvt. 1 (m. 11-15)

Mvt. 2 (m. 196-202)

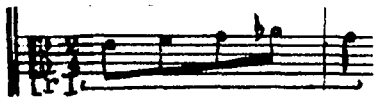
Mvt. 2 (m. 293-298)



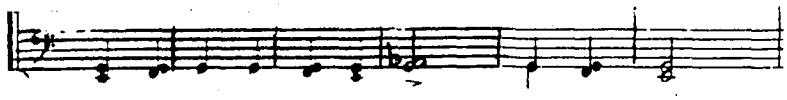
At measures 310-314 the first violin has a transformation of motive [r] which is accomplished by a partial diminution of the previous transformation of [r] in the cello at measures 293-298. The addition of accent marks to the descending $\underline{a^b}$ to $\underline{e}$ portion of this transformation (m. 312-314) emphasizes the rhythmic contribution of [j]. The technique is shown in example 7:17.

Ex. 7:17

Mvt. 2 (m. 134)

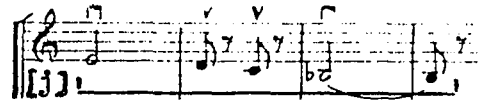


Mvt. 2 (m. 293-298)

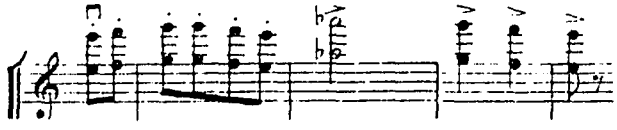


transf. [r]

Mvt. 2 (m. 1-4)

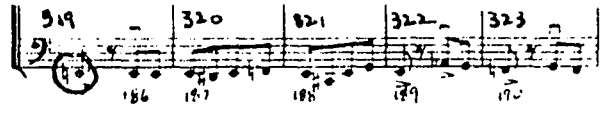


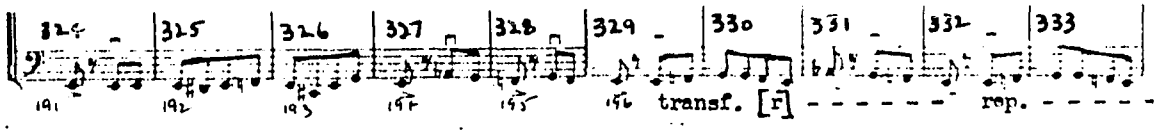
Mvt. 2 (m. 310-314)

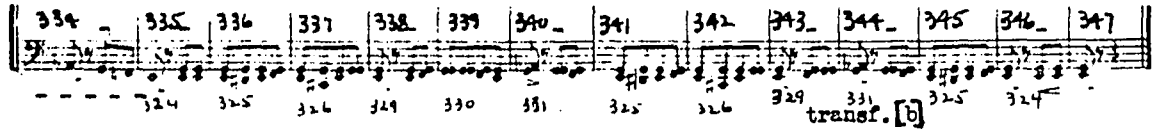


transf. [r]

THEME I'' continued







The recurrence of previously heard linear material is detailed on the line score. In addition, the cello line at measures 320-335 is a diminution of the cello line at measures 276-304. The pitches c and d in the latter occur as c# and d# in the former. At measures 343-344, a recurrence of measures 329 and 331 creates the contour of motive [b]. This discovery strengthens the observation made in example 7:16 (p. 349) that much of the linear material of movement two has its genesis in motive [b].

An aural effect of rushing to an abrupt conclusion is created in the closing measures of movement two by diminution and deletion of measures of previously heard linear material until only a fragment of motive [1] remains.

Summary

Although the m2/M2/m2 scalar pattern is present in movement two as the unifying linear influence, this pattern is not aurally prominent as the movement begins. The drama and agitation which are aurally apparent are created in large measure by the struggle of the m2/M2/m2 scalar pattern to supress the whole tone pattern e-d-c-b^b. As movement two begins, the whole tone influence of motive [j] dominates the linear material. This dominance is never completely secure however. In the vertical structures of the first measures of this movement the gradual buildup of the m2/M2/m2 scalar pattern e-f-g-a^b opposes the aural aggressiveness of the whole tone pattern e-d-c-b^b.

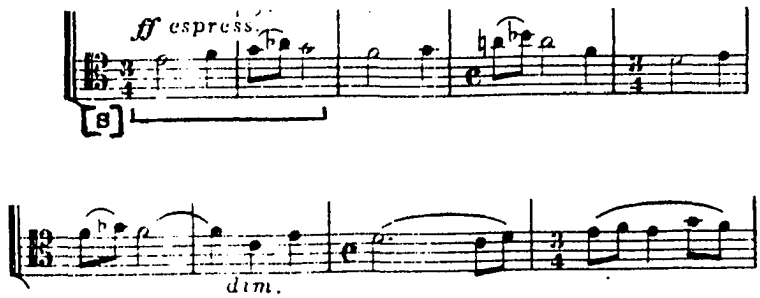
As thematic area II begins, all of the energy of motive [n] is placed on the pitches g and a^b. Motives [o] and [q] both emphasize the complete pattern e-f-g-a^b from which motive [r] arises. The whole tone influence of motive [j] returns at measure 196. Investigation of the line score shows that the dominance of the whole tone pattern of [j] in this return is weakened by an ostinato-like treatment of motives which emphasize the m2/M2/m2 pattern at an e-f-g-a^b level.

The m2/M2/m2 pattern invades the vertical structures at measure 216 (as detailed in example 7:53, p. 432) while the linear material continues to emphasize this scalar pattern. Theme Ia returns for a last time at measure 258. This return is several measures shorter than the previous statement and the aggressiveness of this restatement is greatly depleted by augmentation of its final measures. At the same time emphasis upon the m2/M2/m2 pattern becomes stronger. From this point to the end of the movement, the m2/M2/m2 pattern controls the linear material with primary emphasis upon the e-f-g-a^b pitch frame.

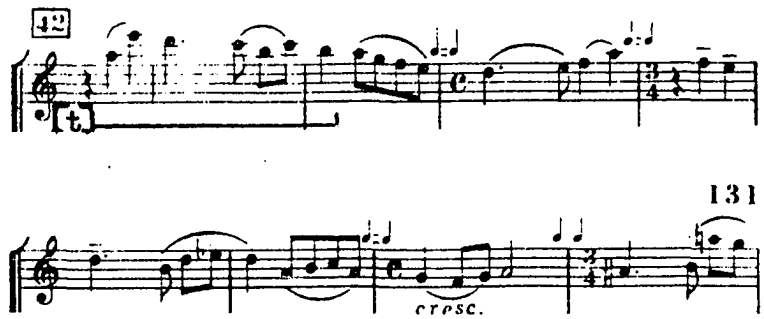
THEMATIC INDEX

Tenth Quartet
Movement Three

PASSACAGLIA THEME



COUNTER MELODY
Variation one



GRAPHIC ANALYSIS OF FORMAL STRUCTURE

Third Movement

Adagio - E - Passacaglia Variations - 107 measures

$\frac{3}{4}$ meter.

Theme

period form
1
E:

Variations one through five

cello has theme; counter-melody by first violin; inner voices provide harmony throughout.
10
E:

Variation six

first violin has theme; counter-melody by cello; inner voices provide harmony.
65
E:

Variation seven

theme returns to cello; counter-melody by first violin; inner voices provide harmony.
74
E:

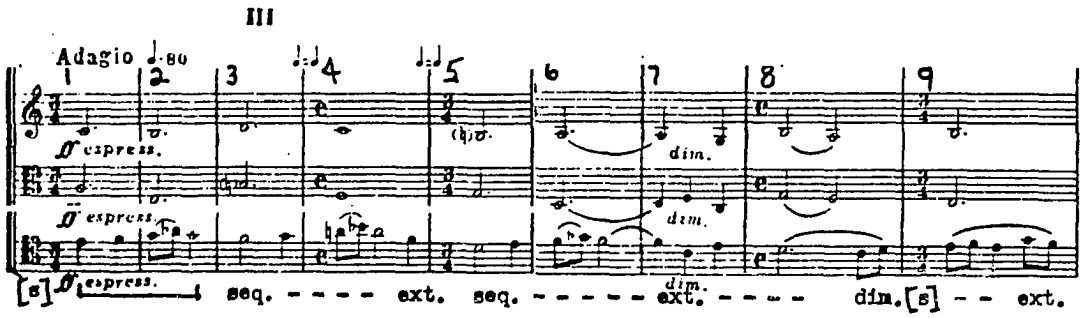
Coda

begins with first four measures of theme in viola and moves to gradual emphasis of the pitch patterns of motives [u] and [v] of the fourth movement.
87
E: A^b:

This investigation has observed that the many manifestations of the prominent characteristics of motive [a] make important contributions to structural unity in this quartet. The detailed analysis of the linear material of movement two has illuminated the ever-increasing focus of the m2/M2/m2 scalar pattern within an e^{b}-a pitch frame. Thus the ear is well prepared for the emergence of motive [s] (see example 7:9, pp. 335-336) whose pitch frame and m2/M2/m2 scalar pattern are both implicit in motive [a].

Attention has been called to the influence of the E tonal expectations of motive [a] upon the primary tonal center of movement two. Although the E tonal center of movement two might suggest a dominant to tonic relationship with the opening a minor triad of movement three, the aural impression of the passacaglia theme is clearly E phrygian rather than A aeolian.

PASSACAGLIA THEME

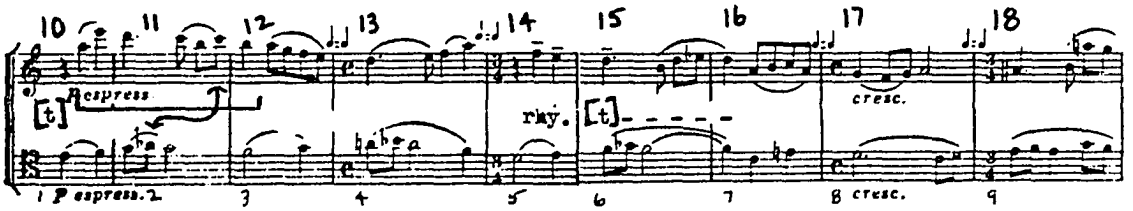


Movement three is a passacaglia with seven variations whose coda section serves as a transition to the fourth movement which is joined without pause. Although four motives of movement four will be found to show an influence of the m2/M2/m2 scalar pattern, motive [s]

(m. 1-2) may be considered the apex of the continuing metamorphosis of this prominent scalar pattern: all previous motives which display this scalar pattern are preparing for the emergence of motive [s]; although the m2/M2/m2 pattern is found in movement four its use there does not represent a continuation of the growth of [s]. The growth of the passacaglia theme from motive [s] is detailed on the line score. The identical harmonic support shown here is retained throughout variations one, two, and three.

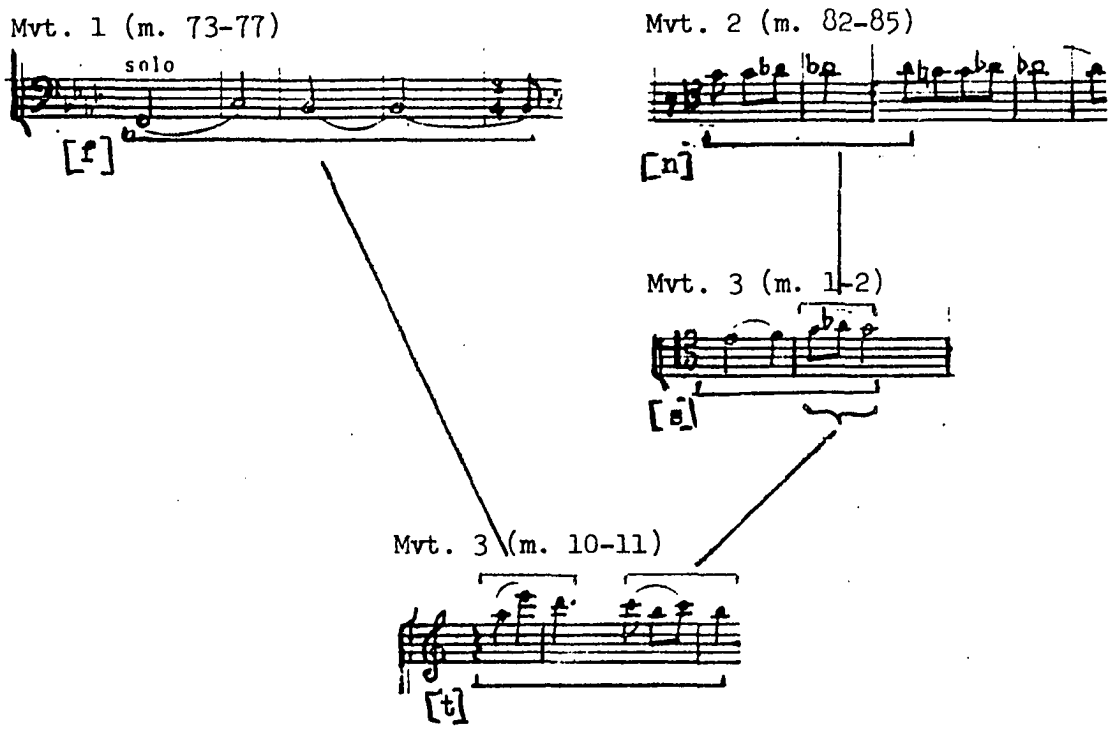
As is to be expected, the passacaglia theme itself is the primary linear source of structural unity in this movement. The repetitions of this nine measure theme are documented on the line score. The first violin states a different counter-melody for each of the seven variations. While no direct quotations from previously heard linear material may be cited, the influence of several important motives from movements one and two as well as the influence of motives [s] and [t] may be observed in the various counter melodies.

VARIATION ONE

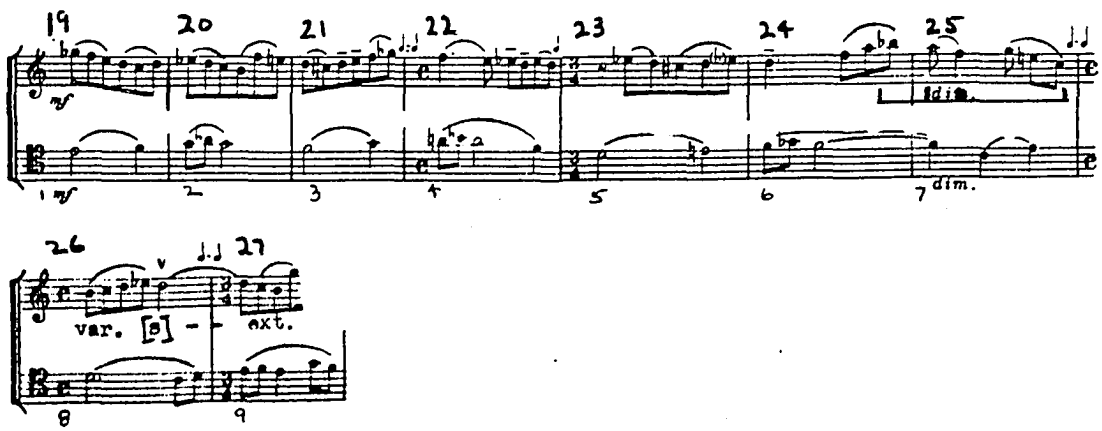


Motive [t] (m. 10-11) suggests the combining of [f] with a fragment of motive [s] as shown in example 7:18. This fragment of [s] (upper neighbor figure) relates back to motive [n] which is the energy force at work throughout theme IIa of movement two.

Ex. 7:18



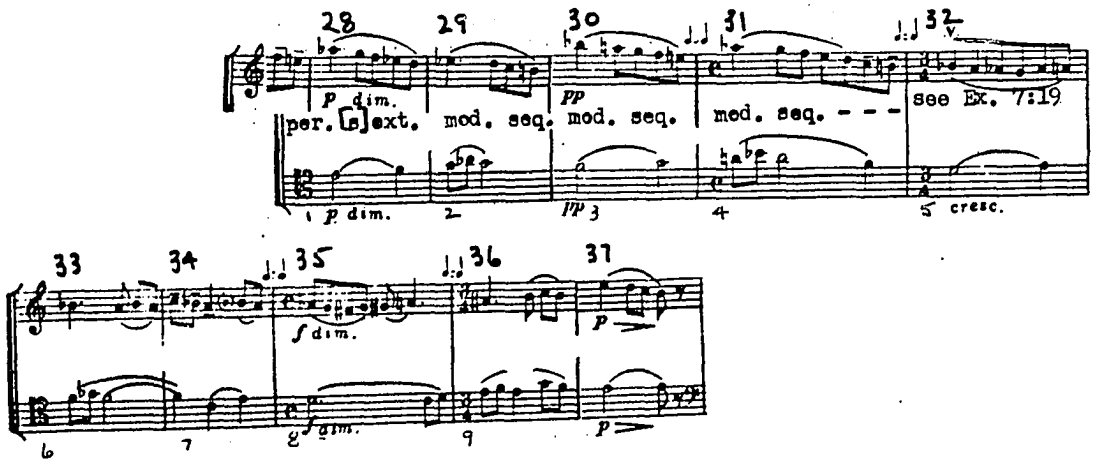
VARIATION TWO



In variation two an increase in chromatic movement is aurally and visually discernable. Although the familiar sound of the first violin at measures 24-25 is not immediately apparent to the eye, there is a similarity between this contour and the contour of motive [a]. The major/minor dichotomy and the m2/M2/m2 scalar pattern implied

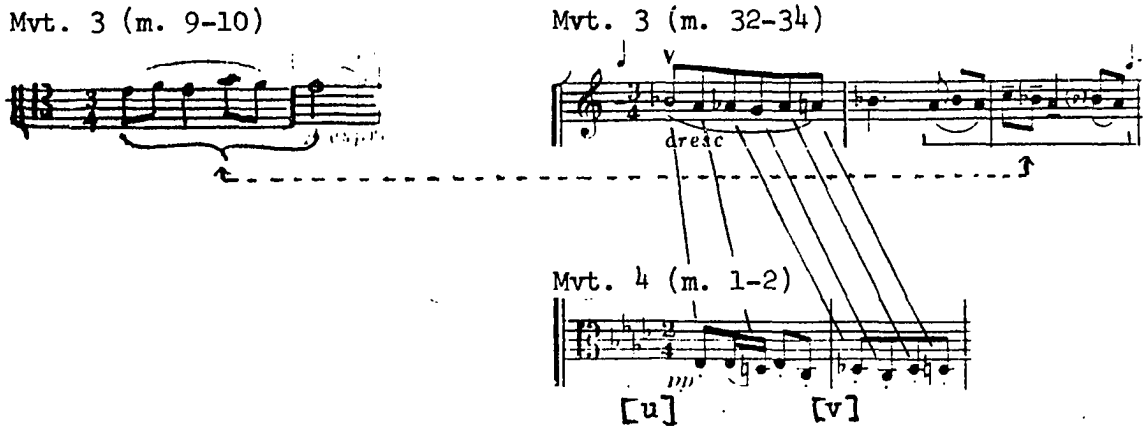
by [a] are not inherent in the present contour. However, this investigation will disclose a number of similar contours which prepare the ear for filling of the contour of [a] at its original a^{b}-e pitch frame at measures 81-86 (see example 7:24, p. 365).

VARIATION THREE



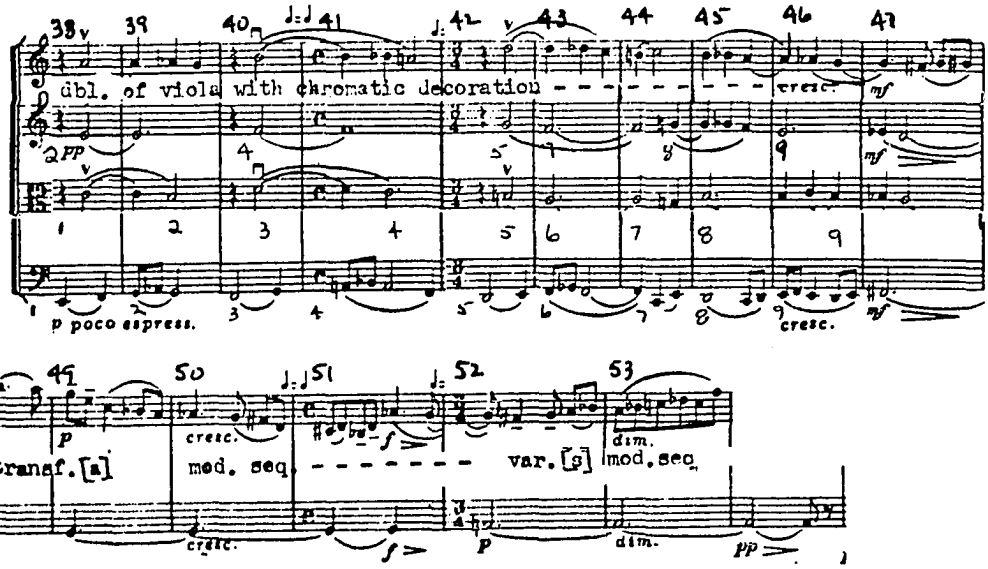
The first violin countermelody begins variation three with a two note anacrusis in measure 27 which creates a permutation of the pitches of motive [s] (f-e-a^{b}-g-f) with an extension (e^{b}-d). At measure 32 the first violin contour contributes to the emergence process of motives [u] and [v] with a contour which suggests a contraction of those two motives. As shown in example 7:19 this is followed in measures 33-34 by a contour which is reminiscent of measure nine of the passacaglia theme.

Ex. 7:19



The passacaglia theme as stated by the cello has been extended by one measure to permit a cadence at measure 37.

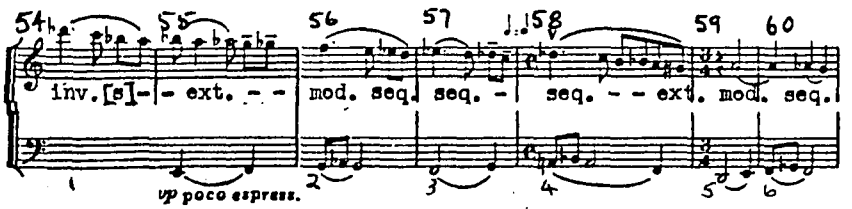
VARIATION FOUR

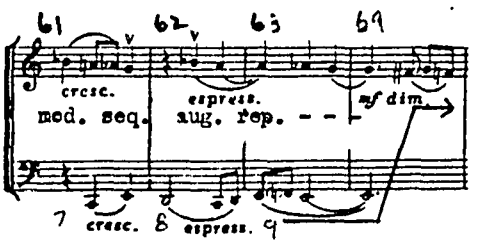


Up to this point the viola has been the real bass line while the cello has stated the passacaglia theme above the second violin and viola harmony. In the fourth variation the cello states the passacaglia theme as a bass line. At measures 38-46 the three upper

instruments provide a chordal background which is basically the same as that which attended the opening statement of the passacaglia theme (m. 1-9): the second violin line is basically measures 1-9 of the viola varied chiefly by deletion of pitches and metric displacement; the viola has measures 1-9 of the second violin line varied chiefly by metric displacement. The first violin at measure 48 suggests a transformation of motive [a] which is only slightly disguised by interval contraction and metric displacement. The visual effect of measures 50-51 as a sequence of measures 48-49 is somewhat disguised by metric displacement, added pitches, and a change of direction at the end. Nevertheless, the aural effect of motive [a] is becoming quite clear.

VARIATION FIVE

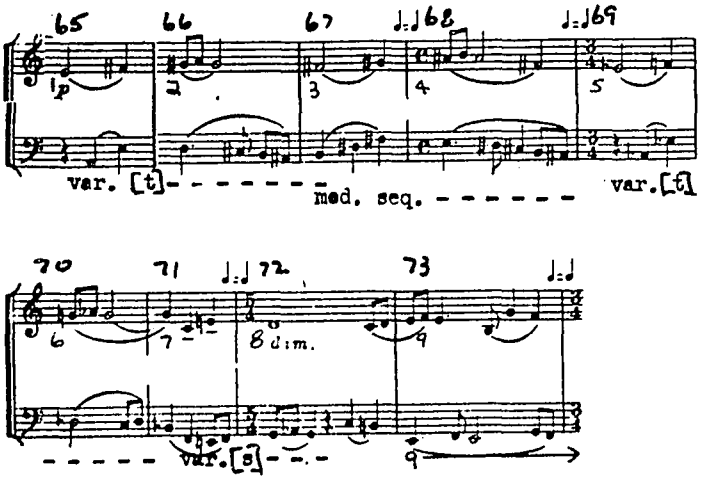




In variation five, measure nine of the theme has been extended by one measure (m. 63-64); the last two notes of the theme occur in the first violin as a preparation for statement of the passacaglia theme by the first violin in variation six.

The first violin contour at measures 54-55 suggests an inversion of the m2/M2/m2 scalar pattern of motive [s] with extension. The aural effect of the rhythm and contour of measures 56-64 suggests a modified sequence pattern of measure 55 as shown on the line score.

VARIATION SIX

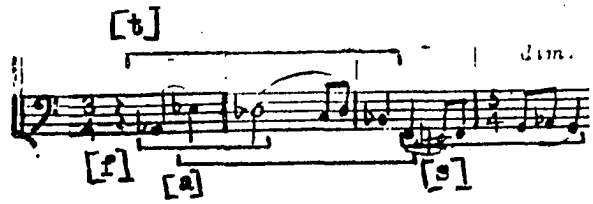


Variation six presents the same basic harmonic material as the original statement of the passacaglia theme except that variation six begins in major mode and returns to phrygian in its second half. This juxtaposition of major mode for phrygian mode (minor scale with flatted second) suggests an influence of the major/minor dichotomy of motive [a]. The inner voices have substantially the same harmonic filler as in the original statement with accidentals here to accommodate the major mode. Measures 8-9 of the original theme, which were quadruple and triple meter respectively, are both in quintuple meter in this recurrence; this causes a three beat extension of the original measures.

While the cello line at measures 69-70 is shaped in the general contour of motive [t] and aurally suggests a second varied sequence of measures 65-66, subtle influence of motive [a] may also be observed as shown in example 7:20.

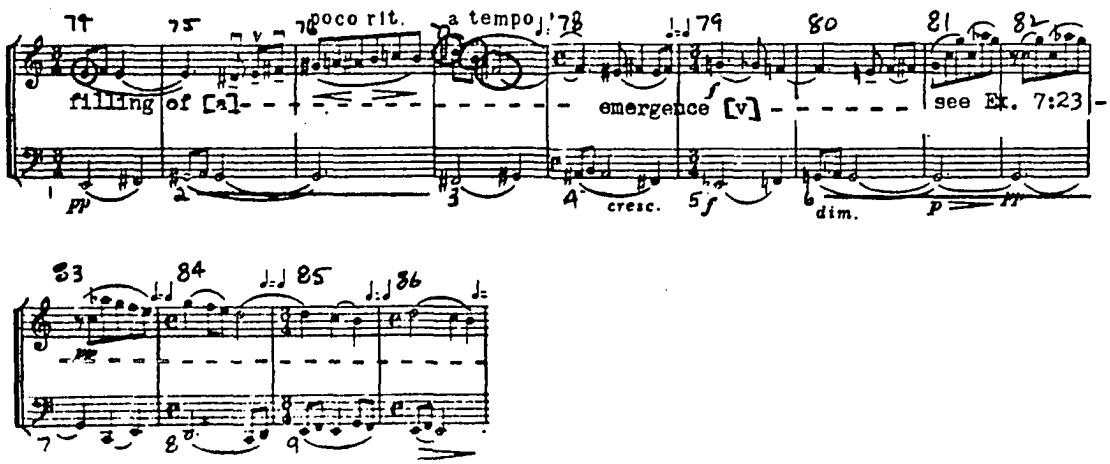
Ex. 7:20

Mvt. 3 (m. 69-72)



Measure 73 of the line score shows the cello imitating the two closing notes of the passacaglia theme in preparation for a return of the theme as the bass line for variation seven.

VARIATION SEVEN

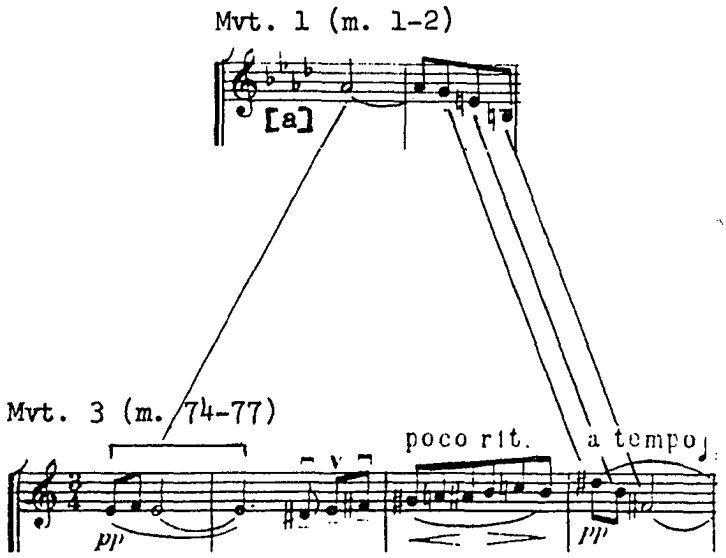


Variation seven begins with the theme and its harmonic material from the original statement in major mode and moves to phrygian mode in its second half. This statement of the theme by the cello has been lengthened to thirteen measures by extension of measures

two and six of the original statement and the addition of one measure at the end of the original to allow for a cadence before beginning the coda section.

The opening measures (m. 74-77) of the first violin countermelody of variation seven are a transformation of motive [a] by filling and by displacement of the first note as shown in example 7:21.

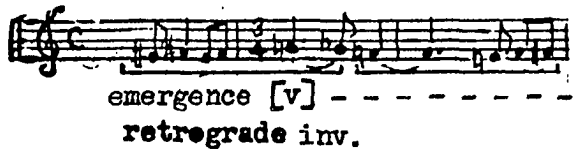
Ex. 7:21



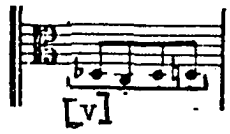
As shown in example 7:22 measures 78-80 contribute to the emergence process of the contour of motive [v] by retrograde inversion and augmentation of the shape to come.

Ex. 7:22

Mvt. 3 (m. 78-80)



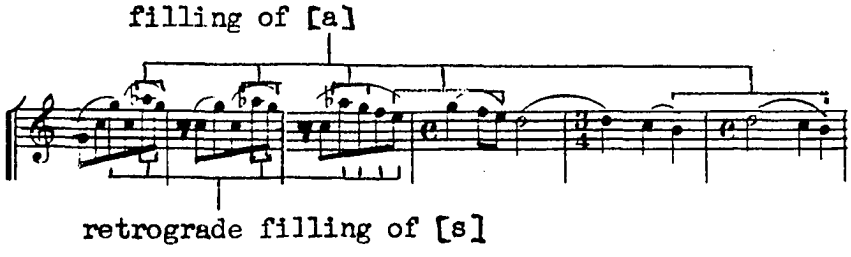
Mvt. 4 (m. 2)



Measures 81-86 of the first violin counter-melody as shown in example 7:23 contain the influence of motives [s] (retrograde) and [a]. These two motives appear intertwined in these measures in their original pitch members.

Ex. 7:23

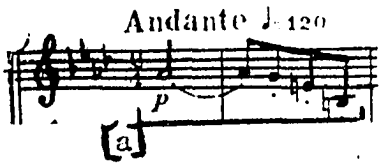
Mvt. 3 (m. 81-86)



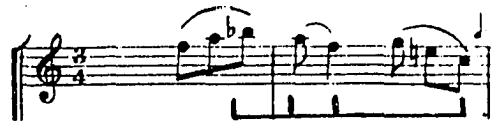
This example gives visual emphasis to what the ear has already accepted: not only do these two motives share a common pitch frame, major/minor dichotomy, and m2/M2/m2 scalar influence, but motive [s] is a shortened retrograde of [a]. This "moment of truth" has been prepared by the rather more subtle references to motive [a] as summarized in example 7:24.

Ex. 7:24

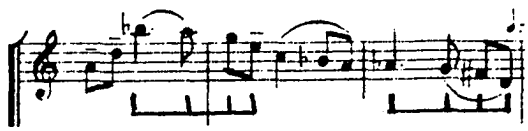
Mvt. 1 (m. 1-2)



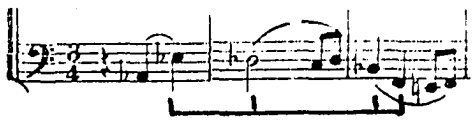
Mvt. 3 (m. 24-25)



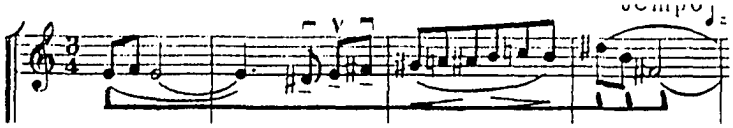
Mvt. 3 (m. 48-50)



Mvt. 3 (m. 69-71)

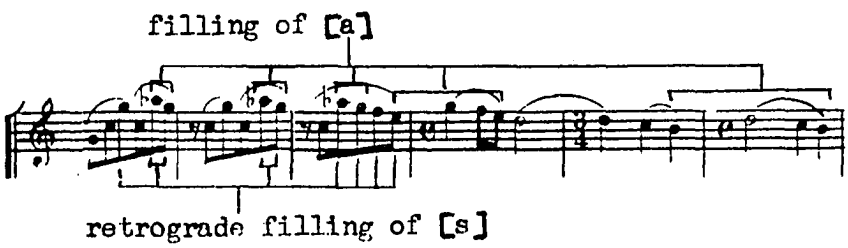


Mvt. 3 (m. 74-77)



These contours shown above prepare the ear for the horizontal combination of motives [a] and [s] which emphasizes the mutual characteristics of these two motives.

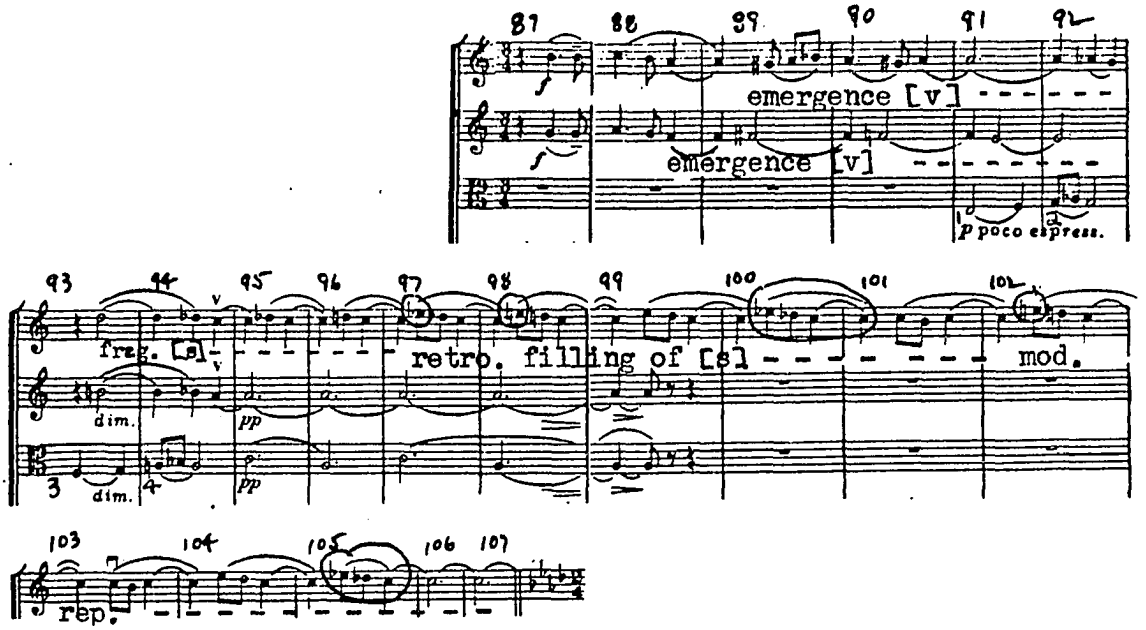
Mvt. 3 (m. 81-86)



Mvt. 1 (m. 1-2)

Mvt. 3 (m. 1-2)

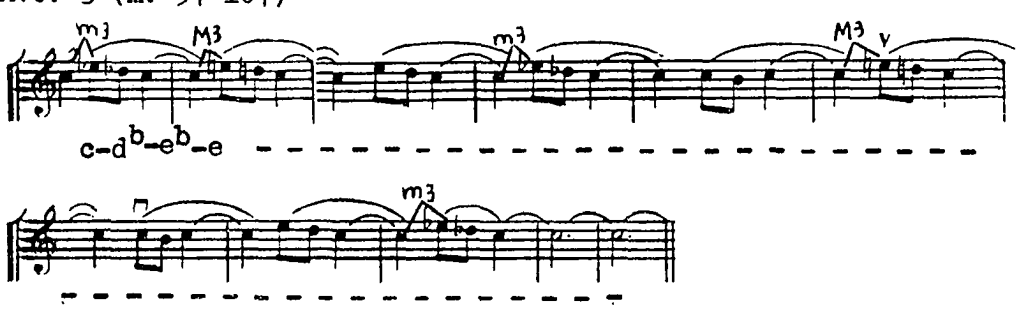
CODA



At measures 89-92 both the first and second violin contribute to the emergence process of motive [v] of movement four: the first violin has a retrograde inversion and an augmented inversion of [v] while the second violin has an inversion of [v] in augmentation. At measures 97-107 of example 7:25 the repeated ♩♩ ♩|♩ rhythmic pattern revolves around the m2/M2/m2 scalar pattern; the major and minor thirds in these measures effectively highlight the major/minor dichotomy.

Ex. 7:25

Mvt. 3 (m. 97-107)



Summary

An impression of calm and repose are hallmarks of movement three. Longer note values, more and longer slurs than the previous two movements, and a tempo of ♩=80 versus ♩=120 and 𝅗𝅥=60 for movements one and two respectively are obvious means to an end.

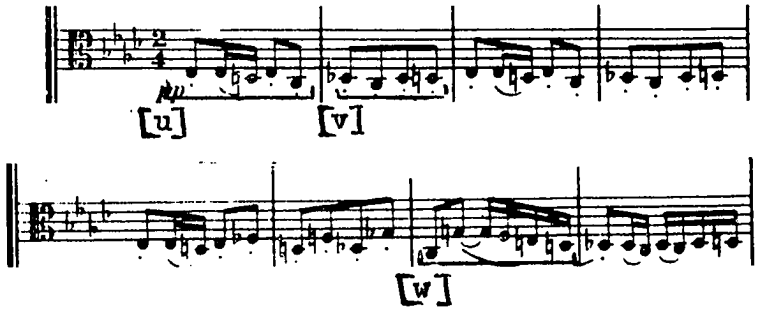
Movement one carefully laid a foundation for the struggle between the two prominent scalar patterns in movement two: whole tone versus m2/M2/m2. The alternating pattern emerged at an e-a^b pitch frame in movement two; movement three is a serene affirmation of this pattern in that pitch frame. There is no need for struggle or aggression here. The repetition of the passacaglia theme creates an expectation for continuation of the return of motive [s] and its m2/M2/m2 pattern so that the gradual increase in chromaticism by the countermelody is never a serious threat to the security of the m2/M2/m2 pattern.

In variations six and seven the momentary influence of major mode with its return to phrygian provides tonal contrast while reminding the ear of the prominent major/minor dichotomy. There is a gradual re-emergence of the contour of motive [a] to the point where it is united in horizontal combination with motive [s] (documented in example 7:24, p. 365). Here the ear receives assurance that the genesis of [s] does indeed lie in motive [a].

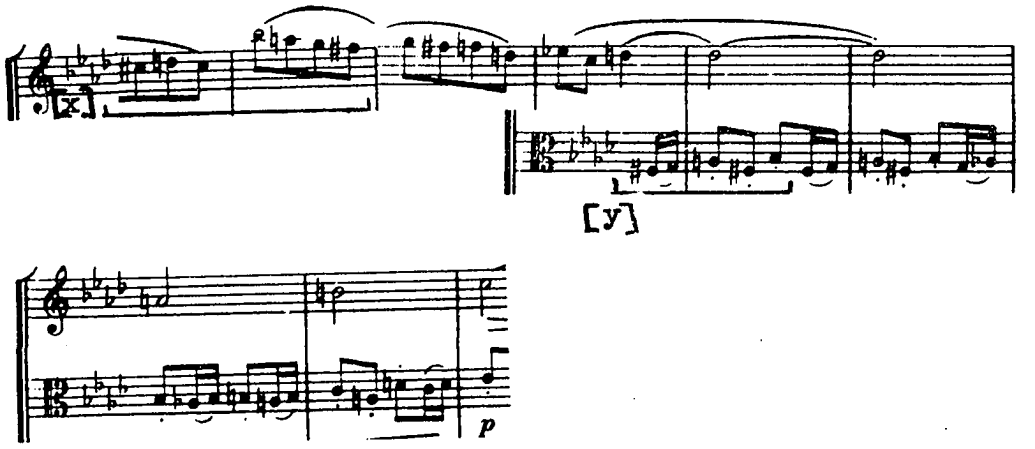
THEMATIC

Tenth Quartet
Movement Four

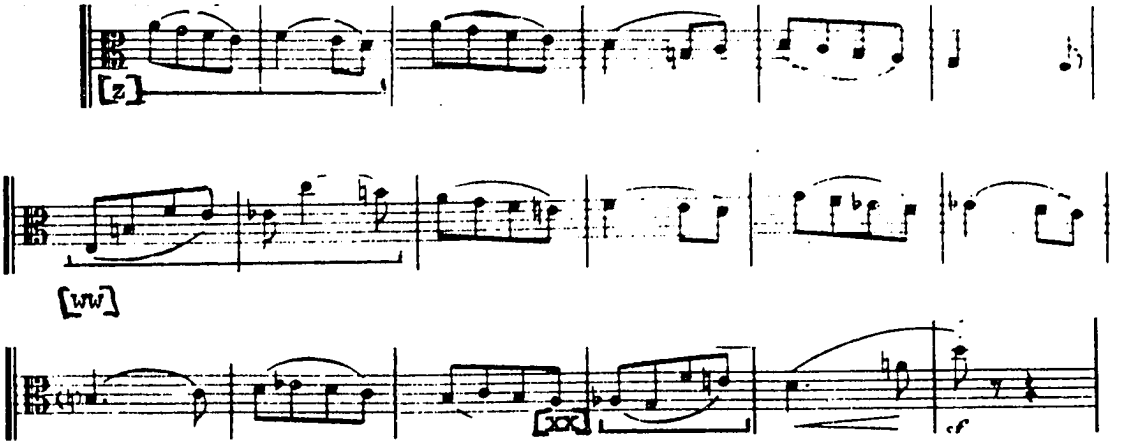
THEME Ia



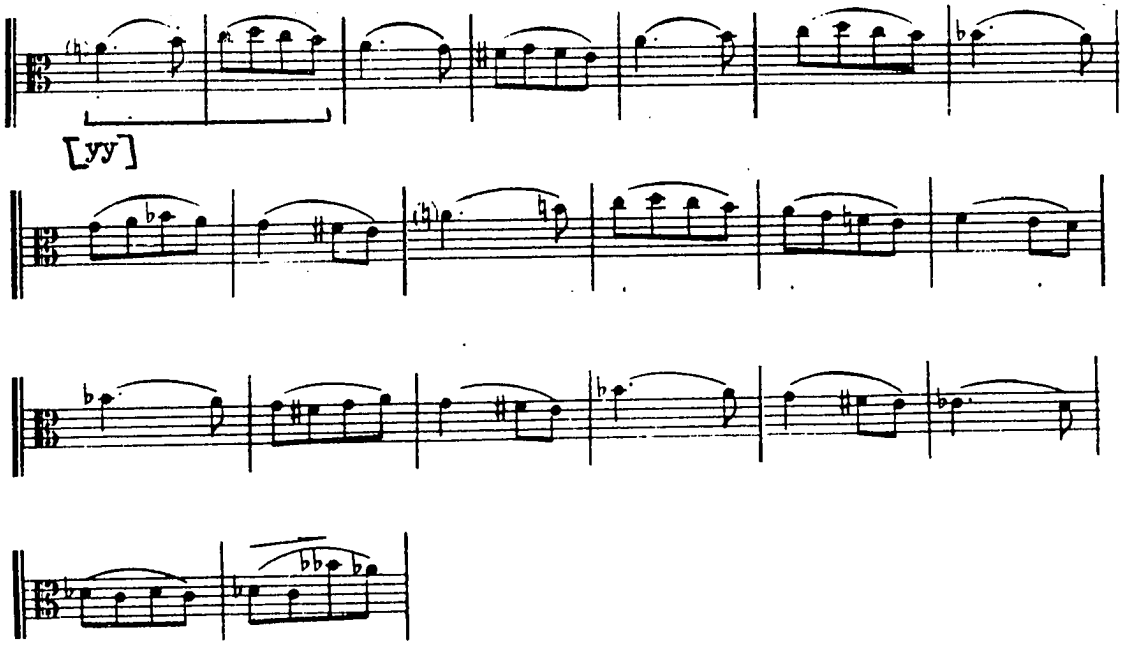
THEME Ib



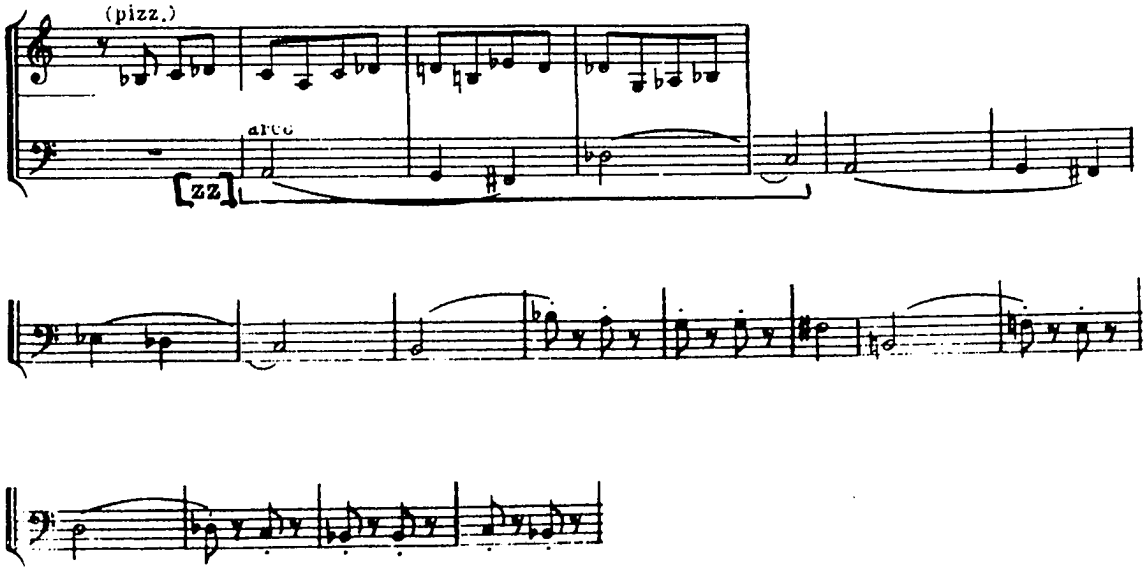
THEME IIa



THEME IIb



THEME IIIa



GRAPHIC ANALYSIS OF FORMAL STRUCTURE

Fourth Movement — Allegretto - A^b - Rondo with development - 525 measures $\frac{2}{4}$ meter.

Thematic Area I				transition		
A	B	A	B	[w]	[v]	[u]
1	22	31	47	51		
A^b:	D:	A^b:	D:			

Thematic Area II		transition	
A	B	[xx]	[v]
64	82	103	
D:	G:		

Thematic Area I		transition	
A'	B	[y]	[zz]
115	130	134	
A^b:	D:		

Thematic Area III		transition			
A	A'	[zz]	[i]	[u]	[v]
142	161	182			
F#:					

Development	transition		
	[ww]	[u]	[v]
199	364		

Thematic Area II	transition	
A	[xx]	[v]
384		
D:		

Thematic Area I		
A	B'	A'
407	423	435
A^b:	D:	A^b:

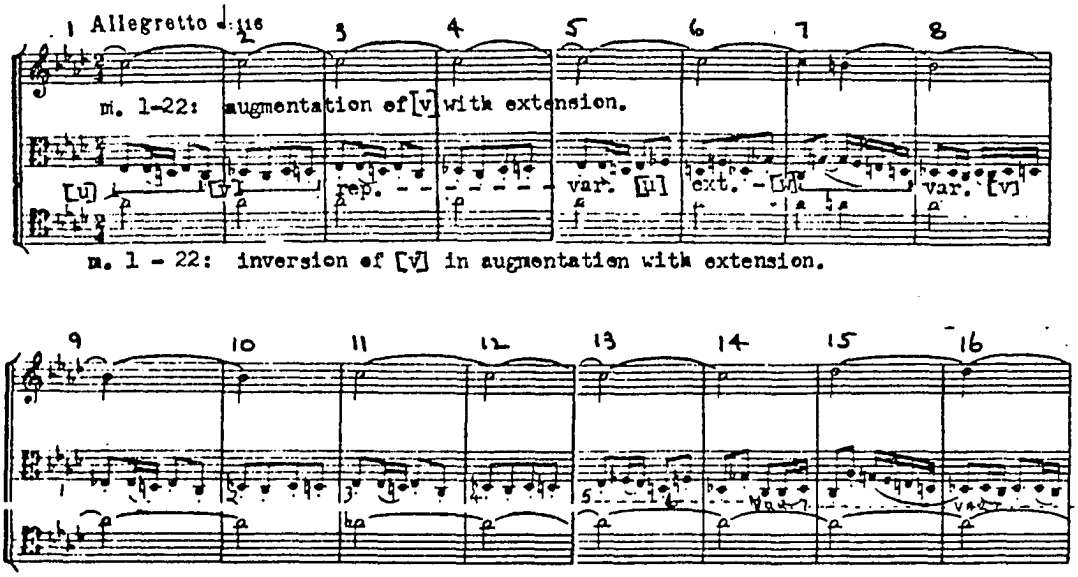
Coda							
[b]	[s]	[c]	[ww]	[u]	[v]	[d]	[a]
439							
A^b:							

The m2/M2/m2 scalar pattern dominated much of the linear material of movements one, two, and three. While this pattern was not threatened by the increased chromaticism of the subordinate linear material of movement three, nevertheless this chromaticism appears to have influenced the first aural stimulus of movement four: motives [u] and [v]. Motive [v] is completely chromatic and, by virtue of its many recurrences, occupies a position of prominent aural impact.

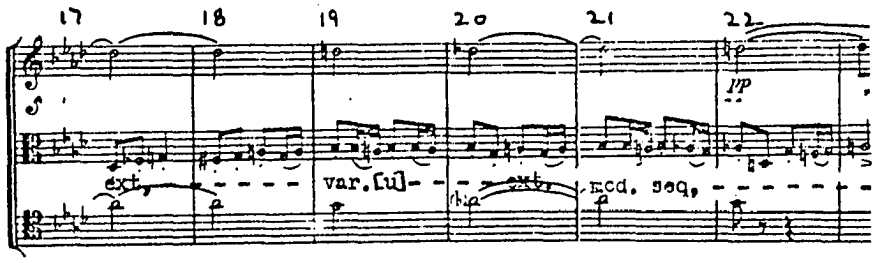
The overall formal scheme of the fourth movement is a six part rondo with an extensive development section and an elaborate coda which summarizes thematic material from movements one and four. The A^b tonal center of movement four is a return to the tonality of movement one. Thus the E tonal expectation of motive [a] which influenced the tonal centers of movements two and three has been abandoned.

THEME Ia

IV



THEME Ia continued



The viola presents the primary linear material of theme Ia while the first violin and cello each present their own version of motive [v]. The growth of theme Ia is shown on the line score.

Aural prominence is given in the beginning of this movement to the major/minor dichotomy by the e^{b}-c of motive [u] (m. 1) versus the e-c of motive [w] (m. 7).

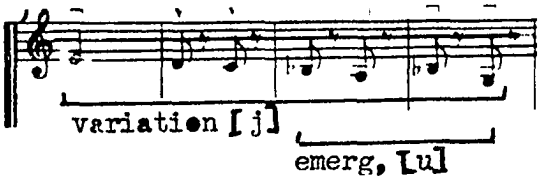
The recurrence of motive [u] at measures 19-20 is varied by fragment repetition and extension. The aural effect of measures 21-22 is that of a modified sequence of measures 19-20.

Example 7:26 summarizes a number of prominent contours of movements one, two, and three which have made contributions to the emergence of motive [u] and [v].

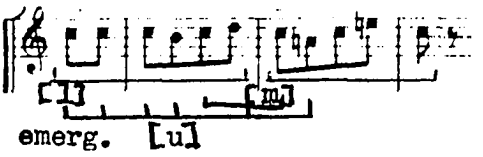
Ex. 7:26

Mvt. 1 (m. 221-223)

Mvt. 2 (m. 22-25)

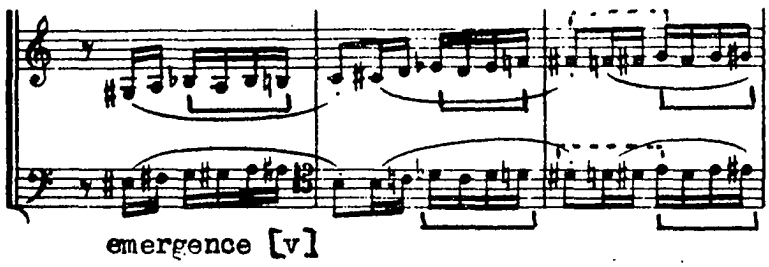


Mvt. 2 (m. 31-33)

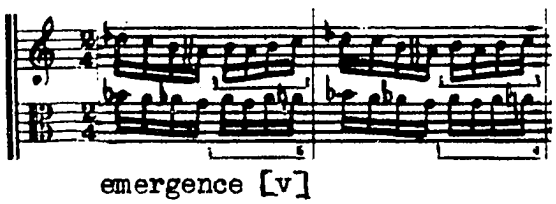


Ex. 7:26 continued

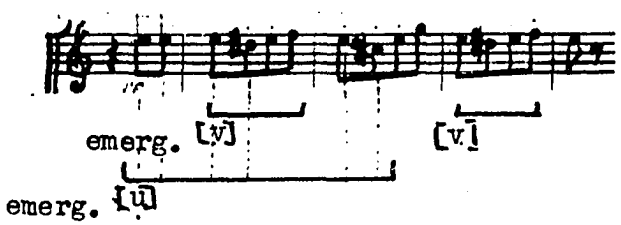
Mvt. 2 (m. 120-122)



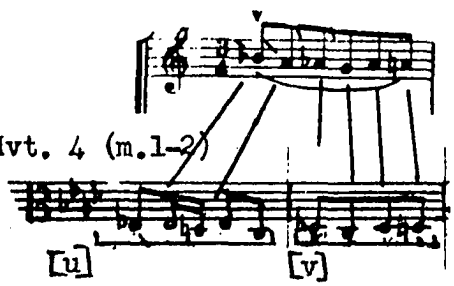
Mvt. 2 (m. 147-148)



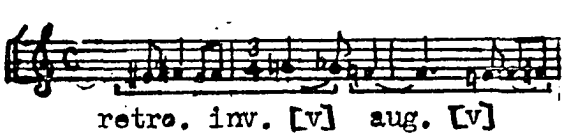
Mvt. 2 (m. 196-200)



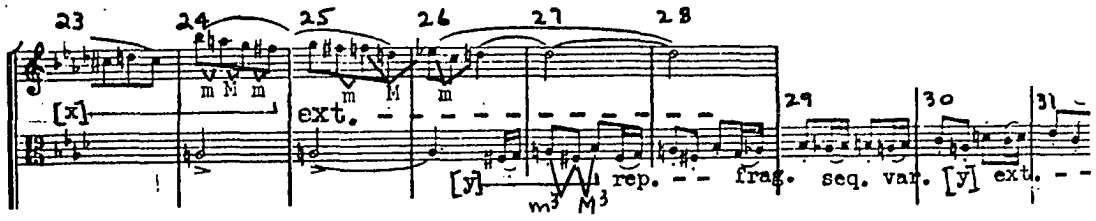
Mvt. 3 (m. 32)



Mvt. 3 (m. 78-80)



THEME Ib RETRANSITION



Pedal tones and the interval of a minor second serve as unifying factors between themes Ia and Ib. The legato style and D tonal center of theme Ib provide contrast to the prominent staccato and A^b tonal center of theme Ia.

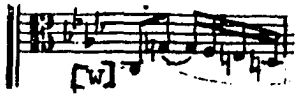
Although Ib is only a phrase in length (m. 23-26), when coupled with the retransition of measures 27-30 it constitutes sufficient departure to cause a return effect when theme Ia recurs at measure 31. Measures 25-28 are basically a continuation of the descending m2/M2/m2 scalar pattern of motive [x]. Motive [y] also belongs to the family of motives in this quartet which exhibit the m2/M2/m2 scalar pattern and prominent minor versus major third.

Motive [x] (m. 23-24) may be considered a transformation of [w] (m. 7) achieved by augmentation and addition of a neighbor tone to the first pitch of [w]. The evidence is the more imposing when the varied recurrence of motive [w] at measures fifteen is considered. This relationship between [x] and [w] is shown in example 7:27 which also documents the permutation relationship between motives [x] and [a].

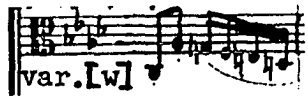
Ex. 7:27

Mvt. 1 (m. 1-2)

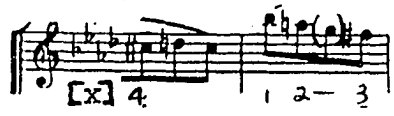
Mvt. 4 (m. 7)



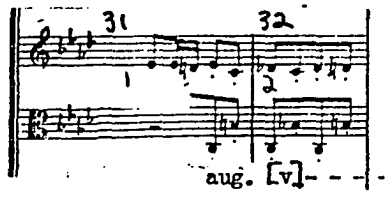
Mvt. 4 (m. 15)

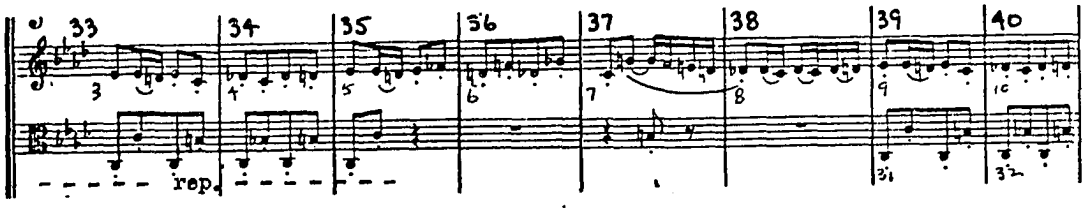


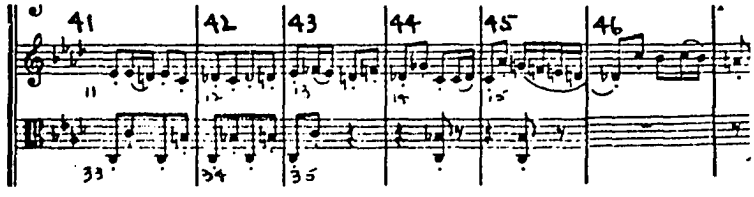
Mvt. 4 (m. 23-24)



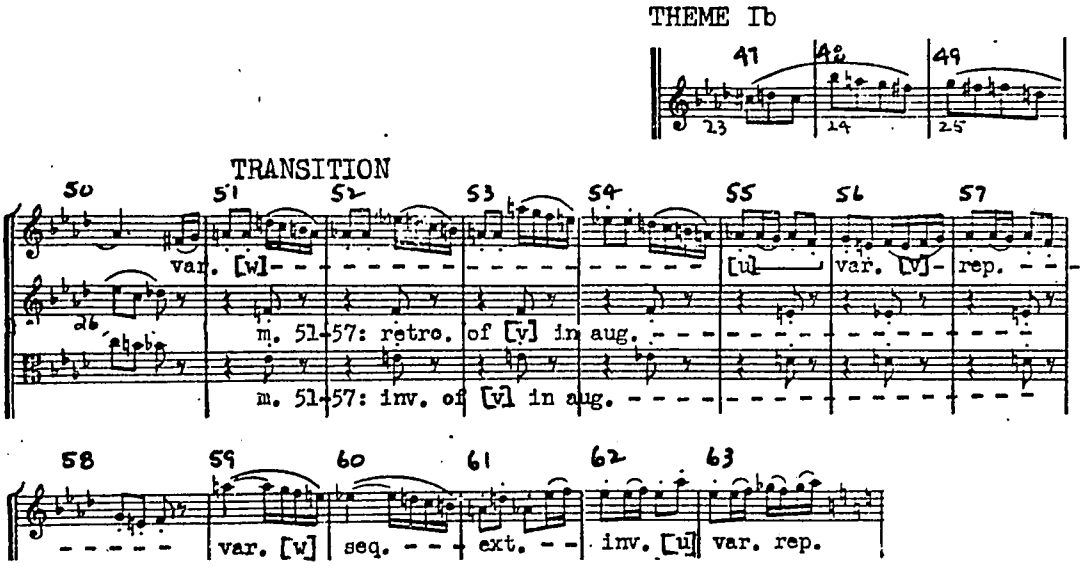
THEME Ia







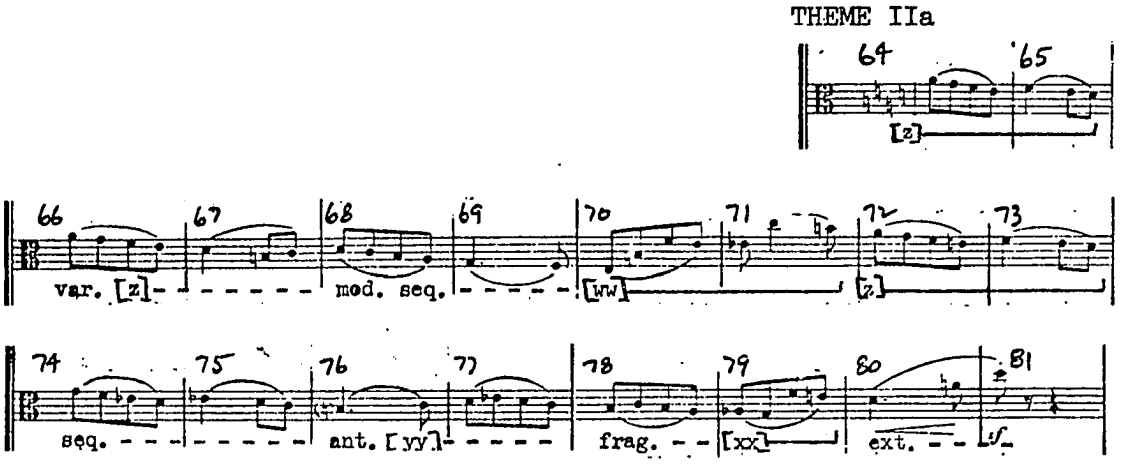
Theme Ia returns in the second violin at measures 31-46. The upper pitches of the viola line at measures 31-43 show recurrences of motive [v] in augmentation.



The four measures of theme Ib recur in the second violin at measures 47-50. Measures 51-63 serve as a transition to theme IIa. The ear has been prepared for the variations of motive [w] at measures 51-54 by the varied recurrence of [w] at measure 15 (see example 7:27).

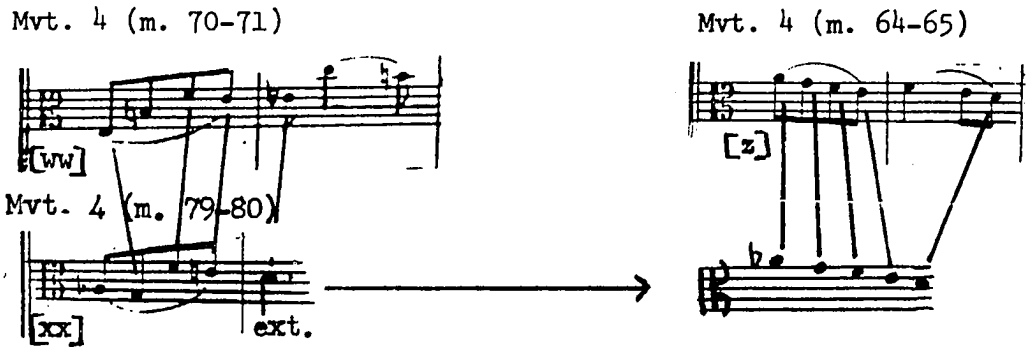
Motive [u] is observed in first violin at measure 55 while measure 56 is accepted by the ear as a varied recurrence of [v]. At this point in the movement motives [u] and [v] have been heard as a pair no less than eight times. In this way the ear has come to expect [v] to follow [u]. Consequently, any contour which follows [u] and which has a shape and/or rhythm similar to [v] is accepted by the ear as a varied recurrence of motive [v]. Although the intervals and rhythm in the present instance (m. 56) are dissimilar from those expected for motive [v], the general contour of one descending note followed by three ascending notes is the same as [v]. It is also noted that the final pitch g at measure 56 is a half-step below the first

note $\underline{a^b}$ of measure 55. A glance at the line score on p. 371 will show that the last pitch of motive [v] is a half-step below the first pitch of [u].



Theme IIa presented by the viola is a flowing double period which moves mostly in stepwise eighth and quarter note patterns. Motive [z] is shown at measures 64-65 while motive [ww] occurs for the first time at measures 70-71. The contour of motive [yy] is anticipated at measures 76-77. Motive [xx] (m. 79) might be considered a transformation of either [z] or [ww] as shown in example 7:28.

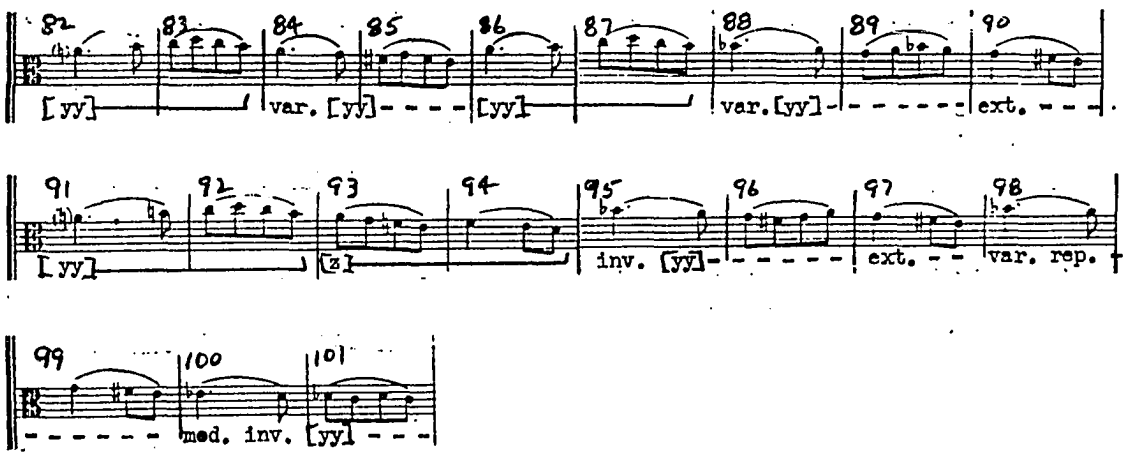
Ex. 7:28



Ex. 7:28 continued

Motive [xx] reduces to a simple scalar pattern of a^b-g-f-e which places it in the family of motives which show an influence of the m2/M2/m2 pattern; this reduction illuminates the similarity of [xx] to motive [z].

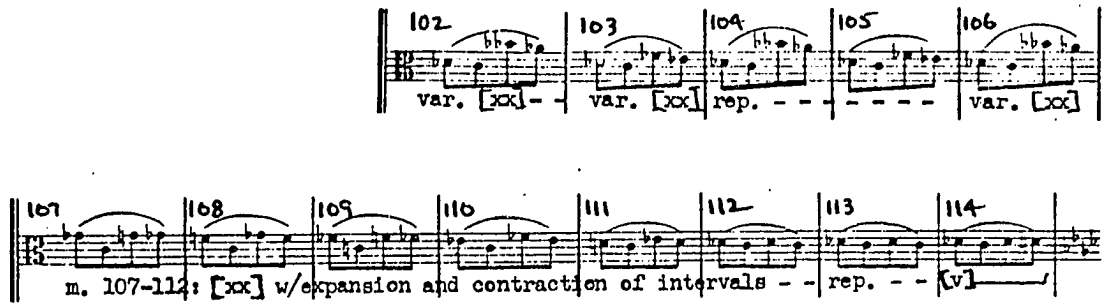
THEME IIb



The chief means of delineation between themes IIa and IIb has been the addition of the pedal tones c and g in the accompanying voices of IIb to the d and a pedal tones which accompanied theme IIa and which are continued here. There is also a shift in tonal center from D to G.

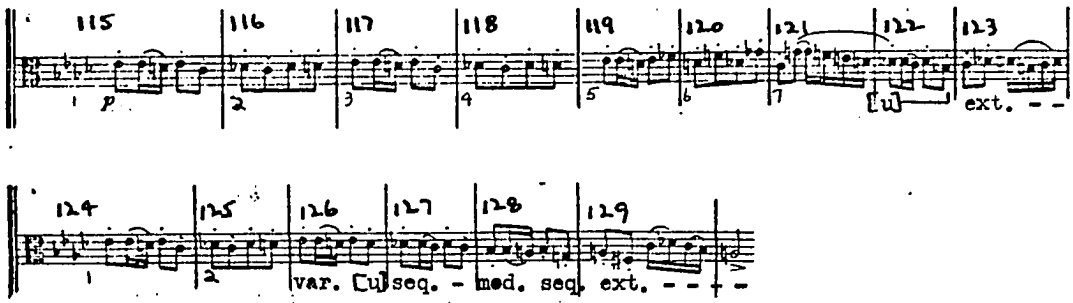
Motive [yy] was anticipated at measures 76-77 at a different pitch level. With exception of measures 93-94 where motive [z] is observed, theme IIb grows entirely from [yy]. The details of this growth are shown on the line score.

RETRANSITION

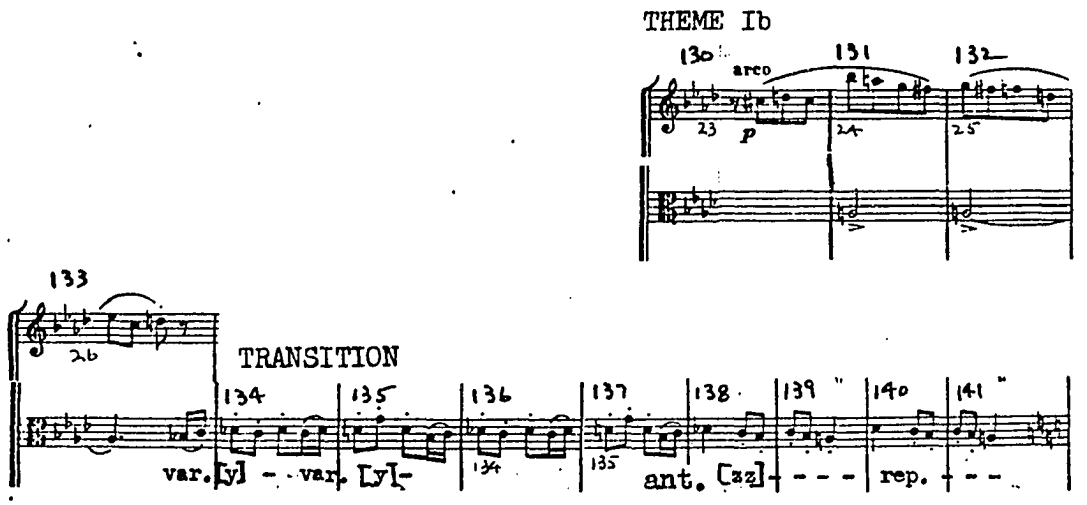


At measure 102 the viola begins a retransition to theme Ia (m. 115-129). This retransition grows from varied recurrences of motive [xx] accomplished by intervallic contraction and expansion. Through this technique motive [xx] is reduced to a slow trill at measures 112-113 and at measure 114 is transformed into motive [v] which anticipates the return of theme Ia (m. 115-129).

THEME Ia'

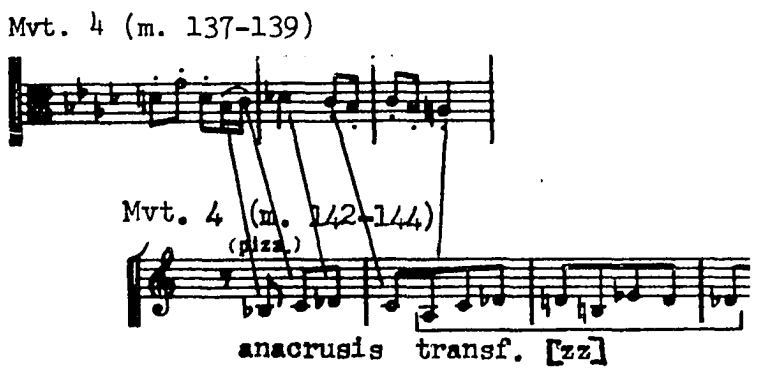


At measure 115 the viola restates the first seven measures of the original statement of theme Ia. The details of this varied recurrence are shown on the line score.

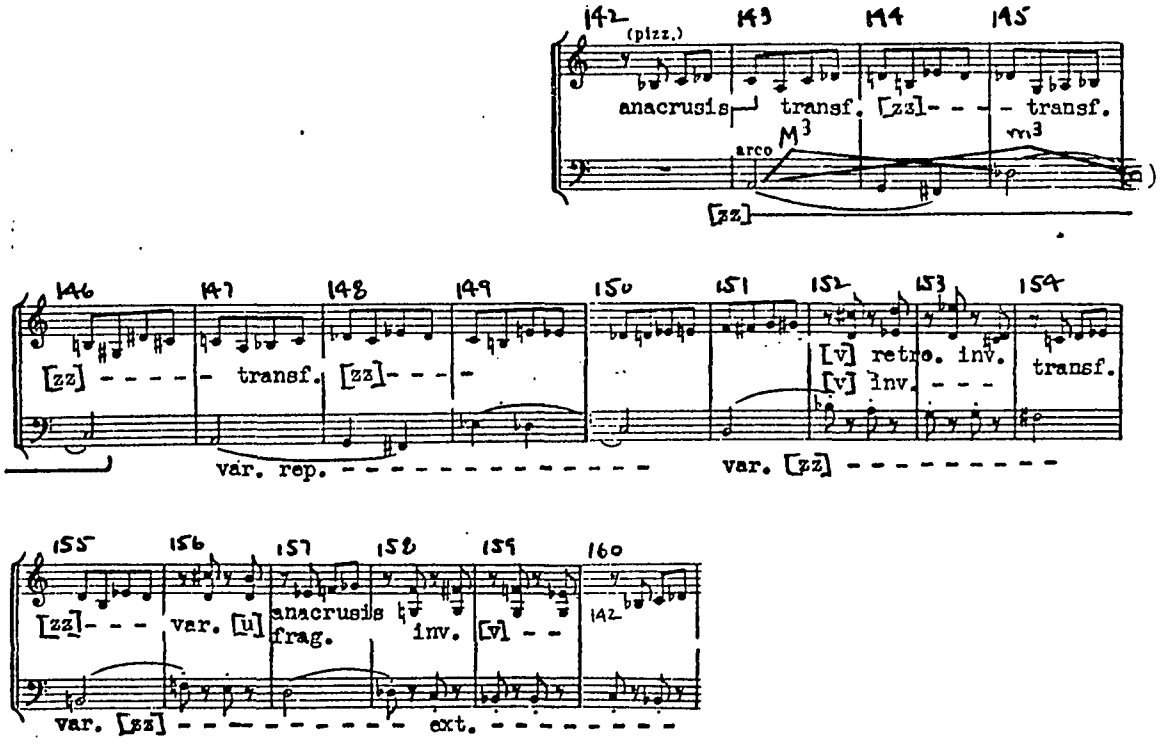


Theme Ib recurs in first violin at measures 130-133. Measures 134-141 are a transition to theme IIIa (m. 142-181). Measures 137-141 anticipate the pitch level and contour of the anacrusis which introduces the transformation of motive [zz] in the first violin at measures 142-143. This anticipatory function of the viola at measures 137-139 is detailed in example 7:29.

Ex. 7:29



THEME IIIa



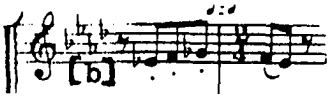
Thematic area III begins at measure 142 with a pizzicato counterpoint in the first violin against a statement of theme IIIa (m. 143-181) in octaves by the lower three instruments. Theme IIIa grows from the single motive [zz], a procedure observed in examination of themes IIa of movement one and the passacaglia theme of movement three.

The ear acknowledges a strong influence of the m2/M2/m2 scalar pattern upon theme IIIa. All of the pitches in the primary melodic line, except b (m. 151 and 155), f (m. 156), and d (m. 157) belong to a scale of alternating minor and major seconds constructed from the F# tonal center of theme IIIa (f#-g-a-b^b-c-d^b-e^b-e). The ear is also impressed by the a-d^b-c of motive [zz] which reflects an influence of the major/minor dichotomy initiated by motive [a].

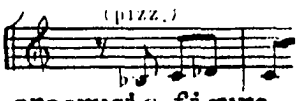
The overwhelming aural impression received from the first violin at measures 143-144 is one of the transformation of motive [zz] accomplished by diminution and added pitches. Measure 142 is heard as an anacrusis to this transformation. The familiar sound of this anacrusis figure is due to its similarity to the contour of motive [b] as shown in example 7:30. This similarity is emphasized at measures 182-185 in a recurrence of the anacrusis figure with extension.

Ex. 7:30

Mvt. 1 (m. 11-12)



Mvt. 4 (m. 142)



anacrusis figure

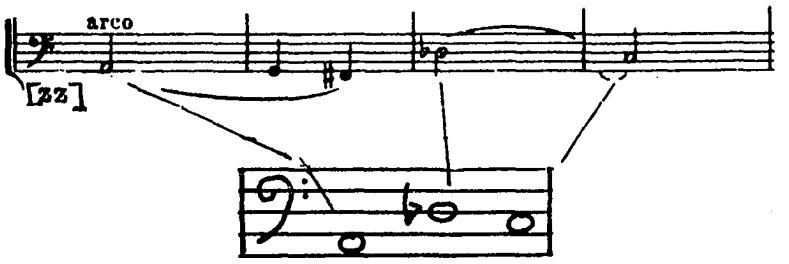
Mvt. 4 (m. 182-185)

anacrusis figure
with extension

The relationship of this transformation and its varied recurrences to the original motive [zz] is shown in example 7:31.

Ex. 7:31

Mvt. 4 (m. 143-146)

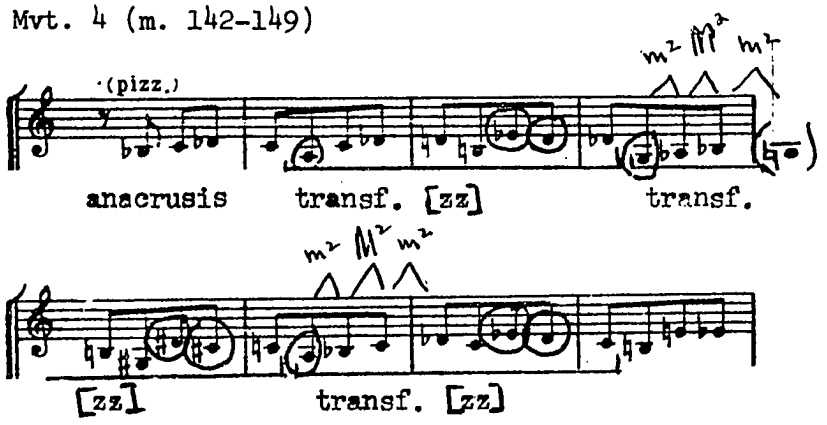


The three notes which describe the basic contour of [zz] are its three longest notes; in addition,

Ex. 7:31 continued

the first and last of these notes is emphasized by placement while the second is emphasized by the leap which precedes it. Throughout the varied recurrences of this transformation of [zz] the basic contour of a five note ascent followed by a two note descent is maintained.

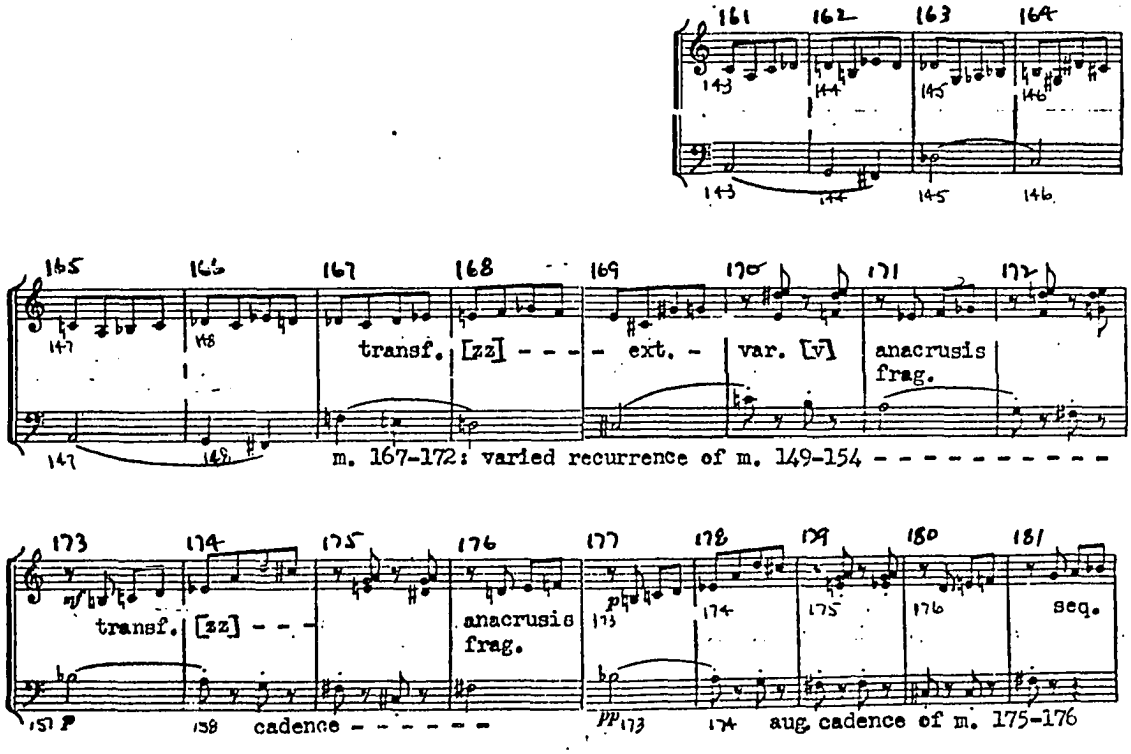
Mvt. 4 (m. 142-149)



The varied recurrence of the transformations of motive [zz] at measures 145-146 and 147-148 shows an influence of the m2/M2/m2 scalar pattern.

The double stops in the first violin at measures 152-153 appear to have been constructed by combining an inversion and a retrograde inversion of motive [v]. The double stops at measure 156 may be viewed as vertical use of motive [u]: d-c#-d-b. The upper pitches of the double stops at measures 158-159 show the inverted contour of motive [v].

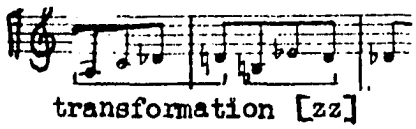
THEME IIIa'



Measures 161-181 are a varied repeat of theme IIIa whose details are shown on the line score. The triple stops in the first violin at measure 170 suggest vertical use of the contour of motive [v]: e-d#-e-f. The first violin at measures 173-174 suggests the initial transformation of motive [zz] which has been varied by a modified octave displacement of its last three notes as shown in example 7:32.

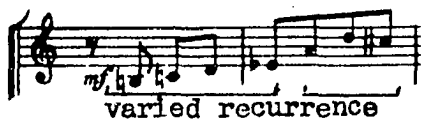
Ex. 7:32

Mvt. 4 (m. 143-144)



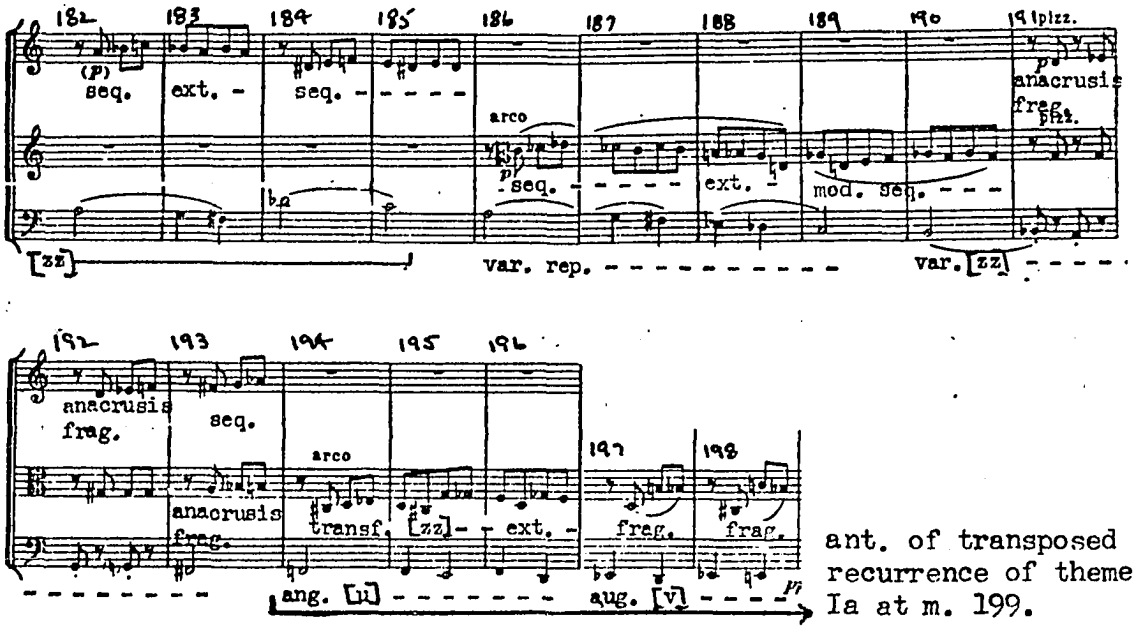
transformation [zz]

Mvt. 4 (m. 173-174)



varied recurrence

TRANSITION

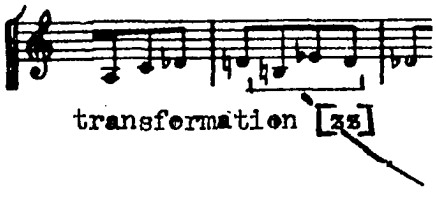


ant. of transposed recurrence of theme Ia at m. 199.

Measures 182-198 are a transition to the development which begins at measure 199. The cello at measures 182-193 shows a recurrence of its line from measures 143-154 which has been varied in this instance by octave displacement. Measures 197-198 in the viola are the central fragment of the transformation of [zz] which has been varied here by interval expansion as shown in example 7:33.

Ex. 7:33

Mvt. 4 (m. 143-144)

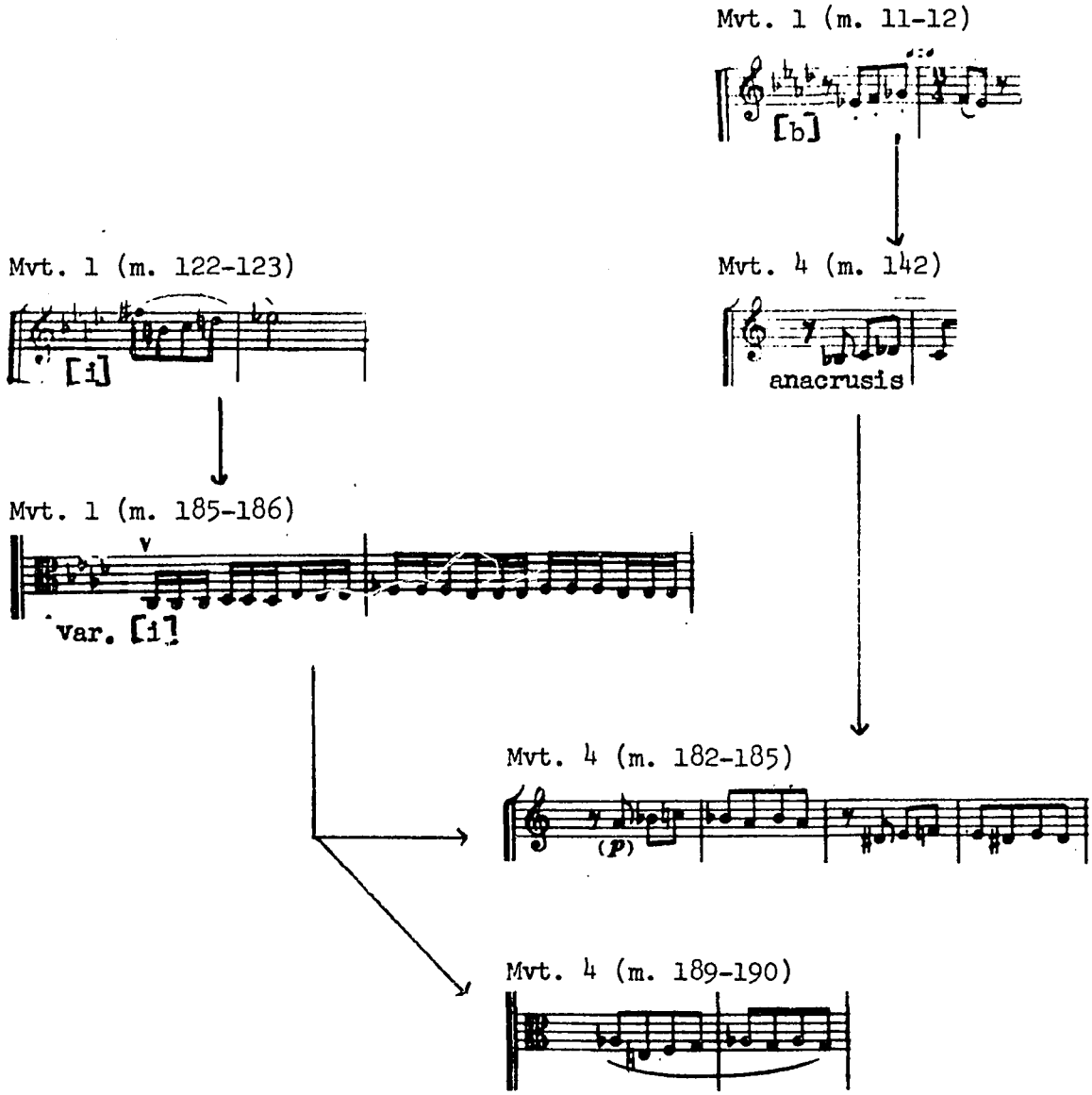


Mvt. 4 (m. 197-198)

The augmentation of motives [u] and [v] at measures 194-198 in the cello anticipates the return of the first eight measures of theme Ia at measure 199.

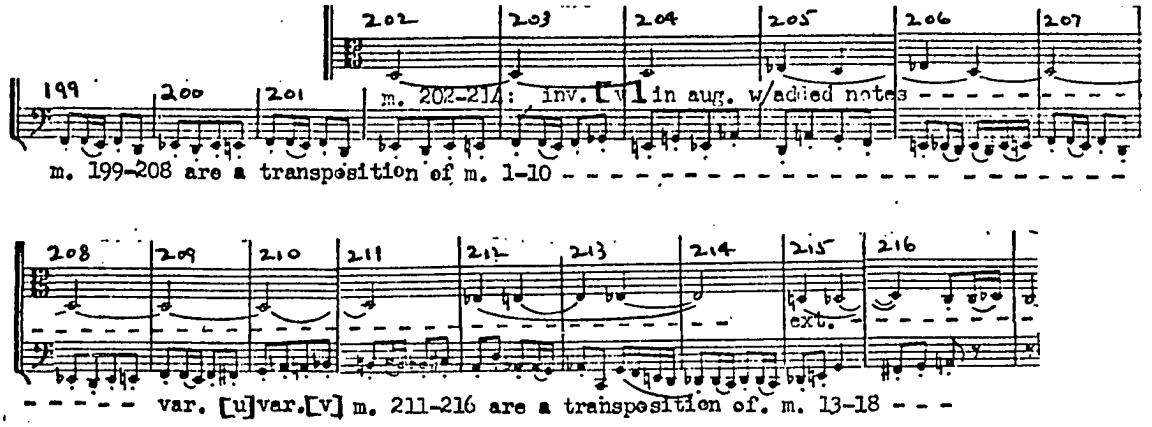
From its first appearance in the first violin at the beginning of theme IIIa, the anacrusis fragment of measure 142 has impressed the ear as familiar material. This impression has been strengthened throughout theme IIIa as the anacrusis fragment receives a number of recurrences. As documented in example 7:34 measures 182-183 in the first violin provide a clue to the origins of this fragment: the slow trill extension to the anacrusis fragment creates a contour which strongly resembles the varied recurrence of motive [i] at measures 185-186 of movement one. The difference between these two shapes (first movement m. 185-186 and fourth movement m. 182-183) is the point at which the change of direction takes place. In support of this aural relationship, the anacrusis fragment as heard in varied recurrence by the viola at measures 189-190 of movement four assumes the exact contour of the varied recurrence of motive [i] at measures 185-186 of movement one. As shown in example 7:34 the heredity of this contour reaches back to motive [b] at measures 11-12 of movement one.

Ex. 7:34



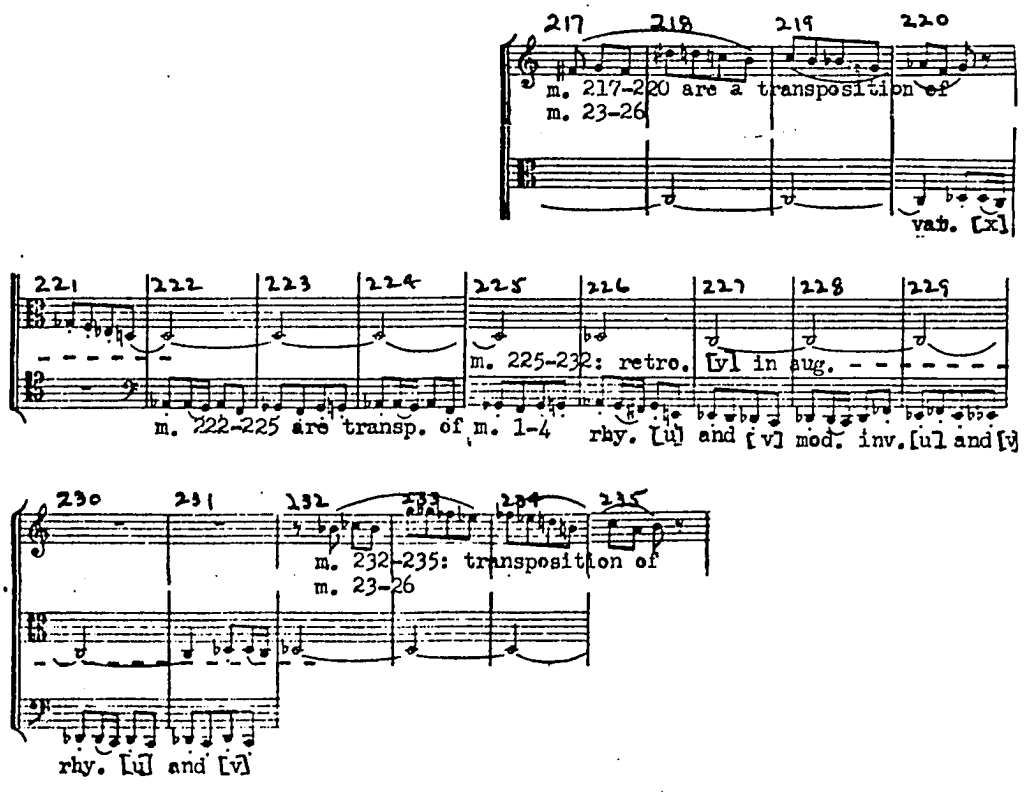
In addition to the observations already made, it is noted that the transformed anacrusis fragment at measures 189-190 of movement four displays the m2/M2/m2 scalar pattern in an e-a^{b} pitch frame. Previous transformations of the anacrusis figure have shown the m2/M2/m2 pattern, however, this is its first occurrence at the e-a^{b} pitch frame.

DEVELOPMENT



The development section begins in the cello at measure 199 with a varied recurrence of thematic area I. The cello at measures 199-208 has a transposed recurrence of theme Ia. The aural effect of measures 209-210 is an application of the rhythm of motives [u] and [v] to an ascending chromatic scale.

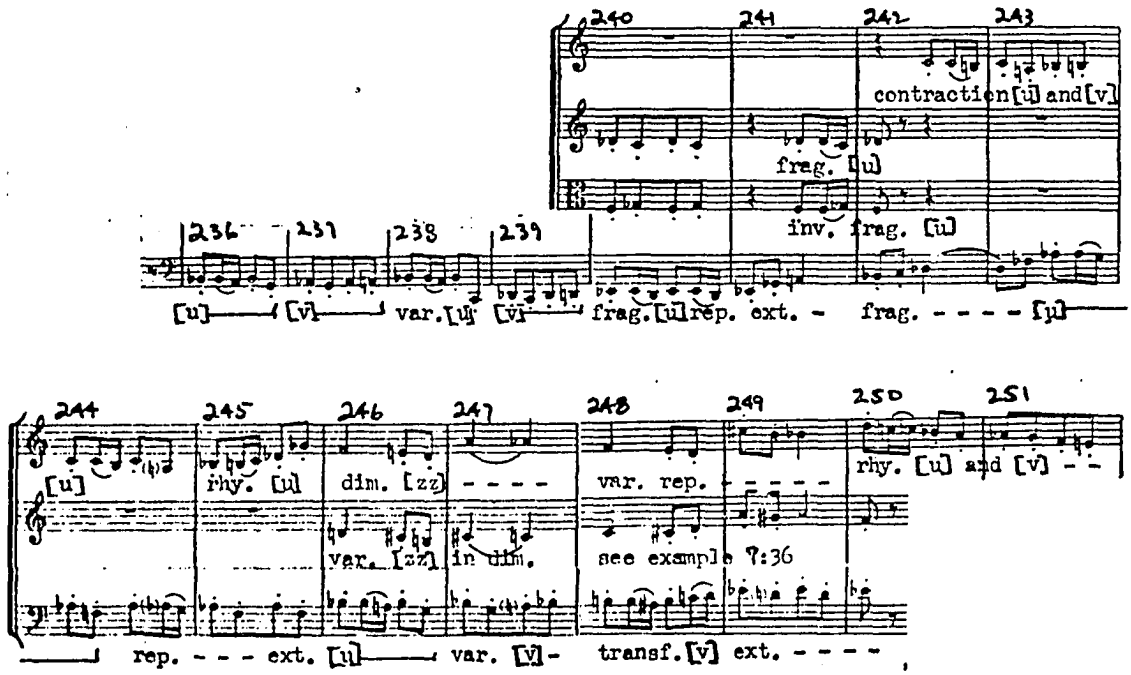
DEVELOPMENT continued



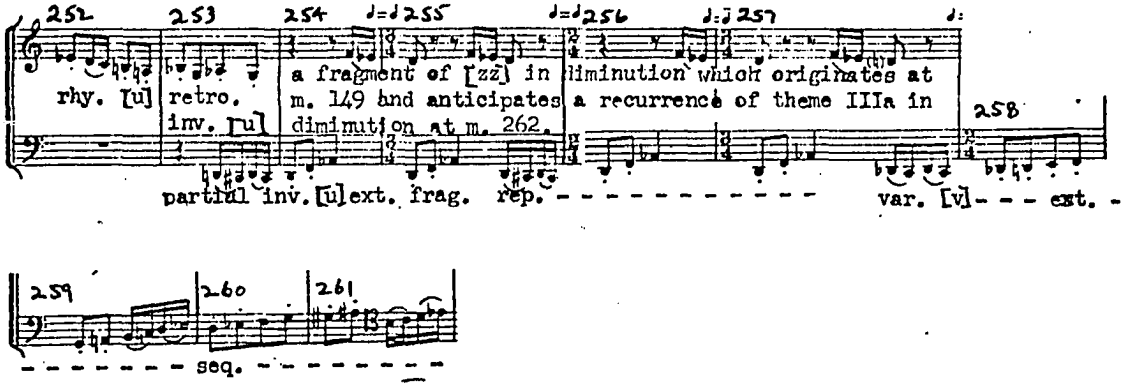
The details of measures 217-235 are shown on the line score. These measures basically contain transposed recurrences of previously heard linear material. No new techniques of motivic manipulation are observed.

The ear has become aware of a gradual increase in chromatic movement. This chromatic influence will continue throughout the development section as chromaticism colors recurrences of a number of prominent motives. There is an aural impression that the chromatic influence is striving for dominance over the m2/M2/m2 influence as emphasis alternates between the two patterns. Continued investigation will show that the two scalar patterns merge at measure 339 where chromatic movement in the first and second violin accompanies recurrence of the passacaglia theme and its original harmonic background in the viola and cello.

DEVELOPMENT continued

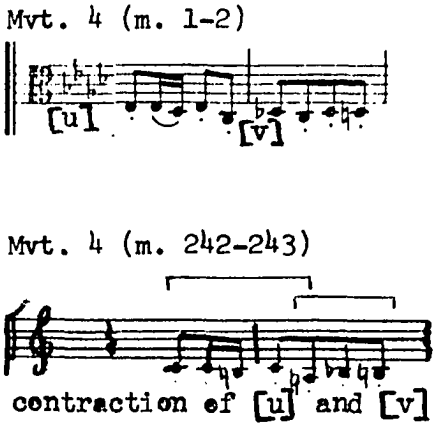


DEVELOPMENT continued



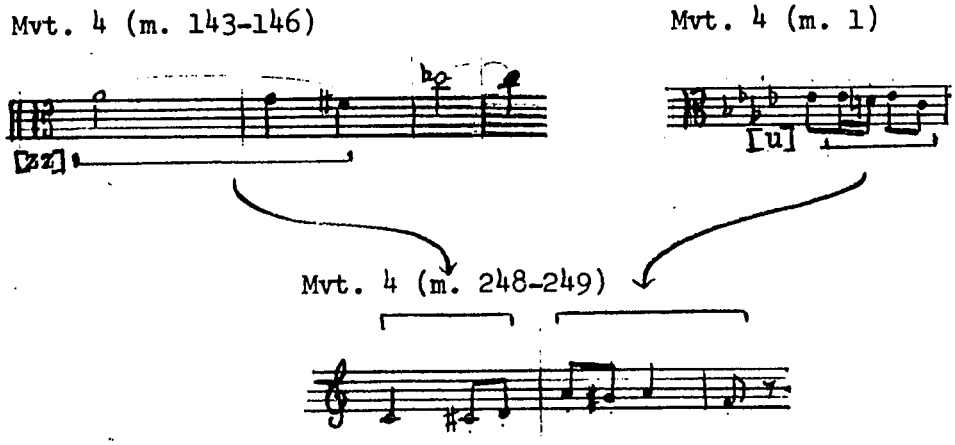
At measures 242-243 the first violin has a contour which could be motive [u] with extension but which, because of the ascending chromaticism of that extension as shown in example 7:35, is heard as a contraction of motives [u] and [v].

Ex. 7:35

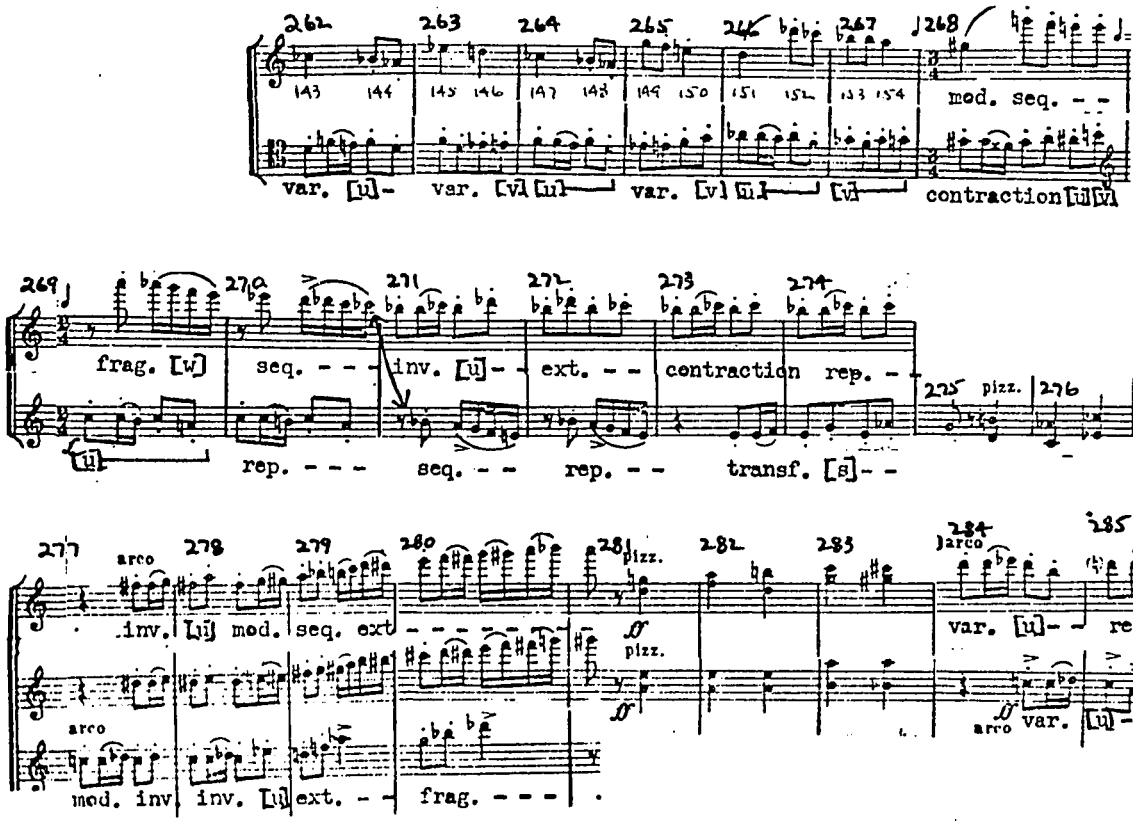


The second violin at measures 248-249 which forms a counterpoint to a varied recurrence of motive [zz] in the first violin suggests a horizontal combination of an inverted fragment of [zz] in diminution and a fragment of [u] in augmentation as shown in example 7:36.

Ex. 7:36



DEVELOPMENT continued

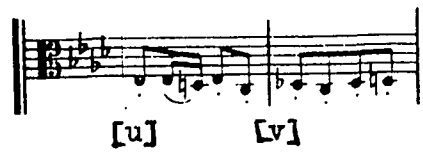


At measures 262-267 the first violin has a recurrence of theme IIIa in diminution. As shown in example 7:37, measure 268 in

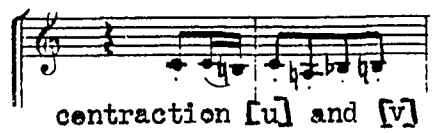
the viola presents a contraction of motives [u] and [v] which has been prepared by the first violin contraction at measures 242-243.

Ex. 7:37

Mvt. 4 (m. 1-2)



Mvt. 4 (m. 242-243)

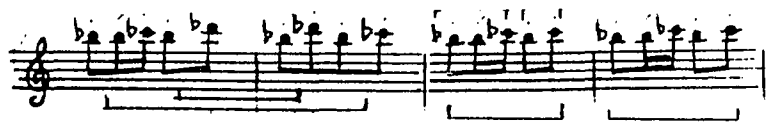


Mvt. 4 (m. 268)

As shown in example 7:38, measures 273-274 in the first violin display a contraction of measures 271-272.

Ex. 7:38

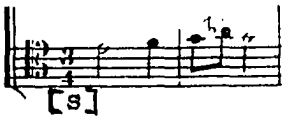
Mvt. 4 (m. 271-274)



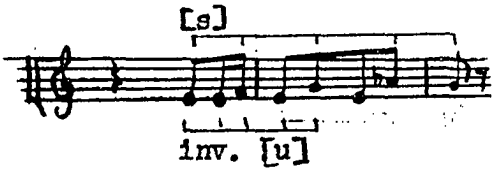
The cello line at measures 273-275 may be derived by indirect affinity as a combination of the rhythm of motive [u] and the pitch contour of motive [s]; it is also noted that the first five pitches of this line form an inversion of motive [u] as shown in example 7:39.

Ex. 7:39

Mvt. 3 (m. 1-2)

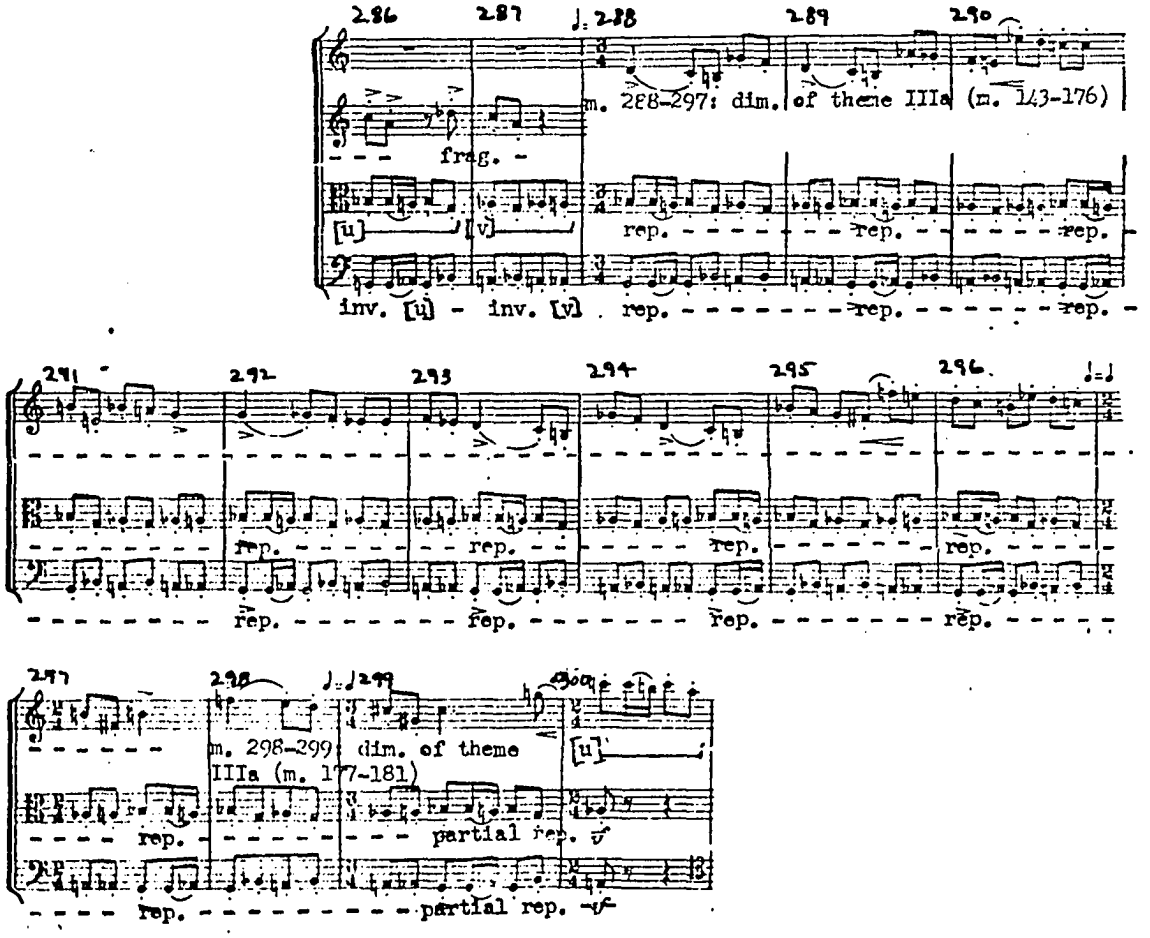


Mvt. 4 (m. 273-275)

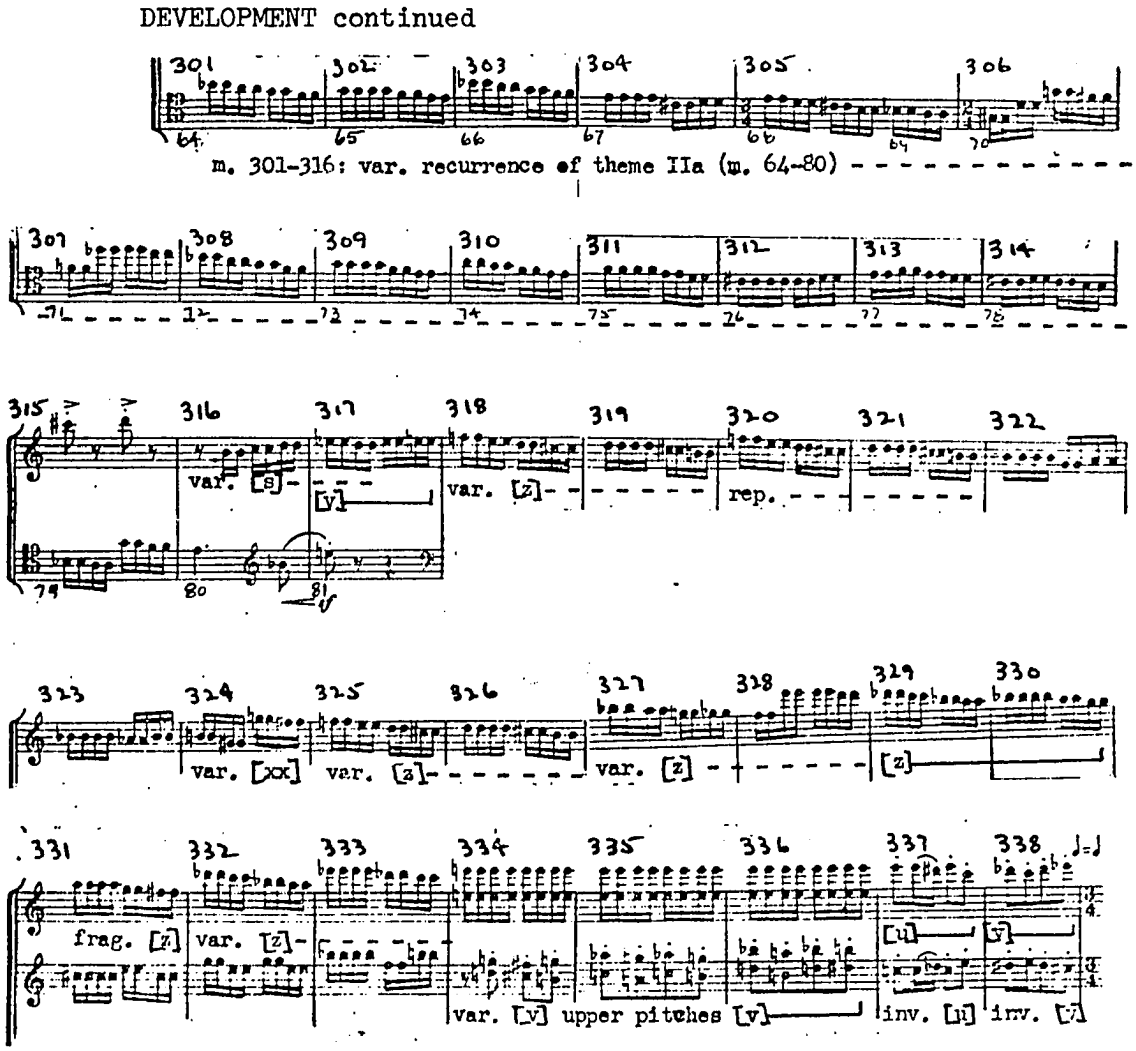


This transformation of motive [s] in its original e-a^{b} pitch frame is an anticipation of the recurrence of the passacaglia theme of movement three at measures 339-363 of this movement.

DEVELOPMENT continued



As shown at measures 286-287, the viola and cello establish a two measure pattern which is then repeated nine times. This ostinato serves as an accompaniment for a recurrence of theme IIIa presented in diminution by the first violin at measure 288.



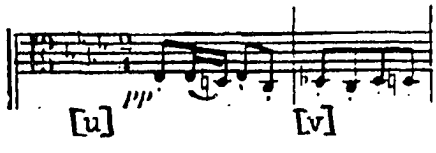
Measures 301-316 in the cello are a transposed recurrence of measures 64-80 of theme IIa which are varied here by use of repeated sixteenth notes. Although the first violin contour at

measures 317-334 begins with motives [s] and [v] in horizontal combination, it is woven mostly from the prominent motives of theme IIa. A close investigation of the line score shows that the intervallic changes which occur in these motives at this point are due to the influence of the prominent m2/M2/m2 scalar pattern. The purpose of this increased emphasis by the m2/M2/m2 pattern is to prepare the ear for a climactic recurrence of the passacaglia theme which will be heard at measures 339-350. At the same time, presentation of the twelve chromatic tones by the lower three instruments at measures 334-336 informs the ear that the m2/M2/m2 pattern is not to have complete dominance.

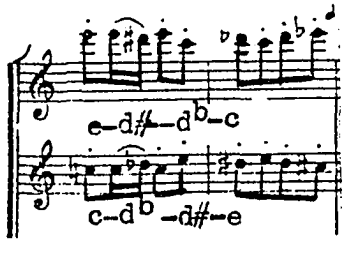
As detailed in example 7:40 attention is further focused upon the m2/M2/m2 pattern by the interval changes which occur in the varied recurrences of motives [u] and [v] displayed at measures 337-338 by the first and second violin.

Ex. 7:40

Mvt. 4 (m. 1-2)



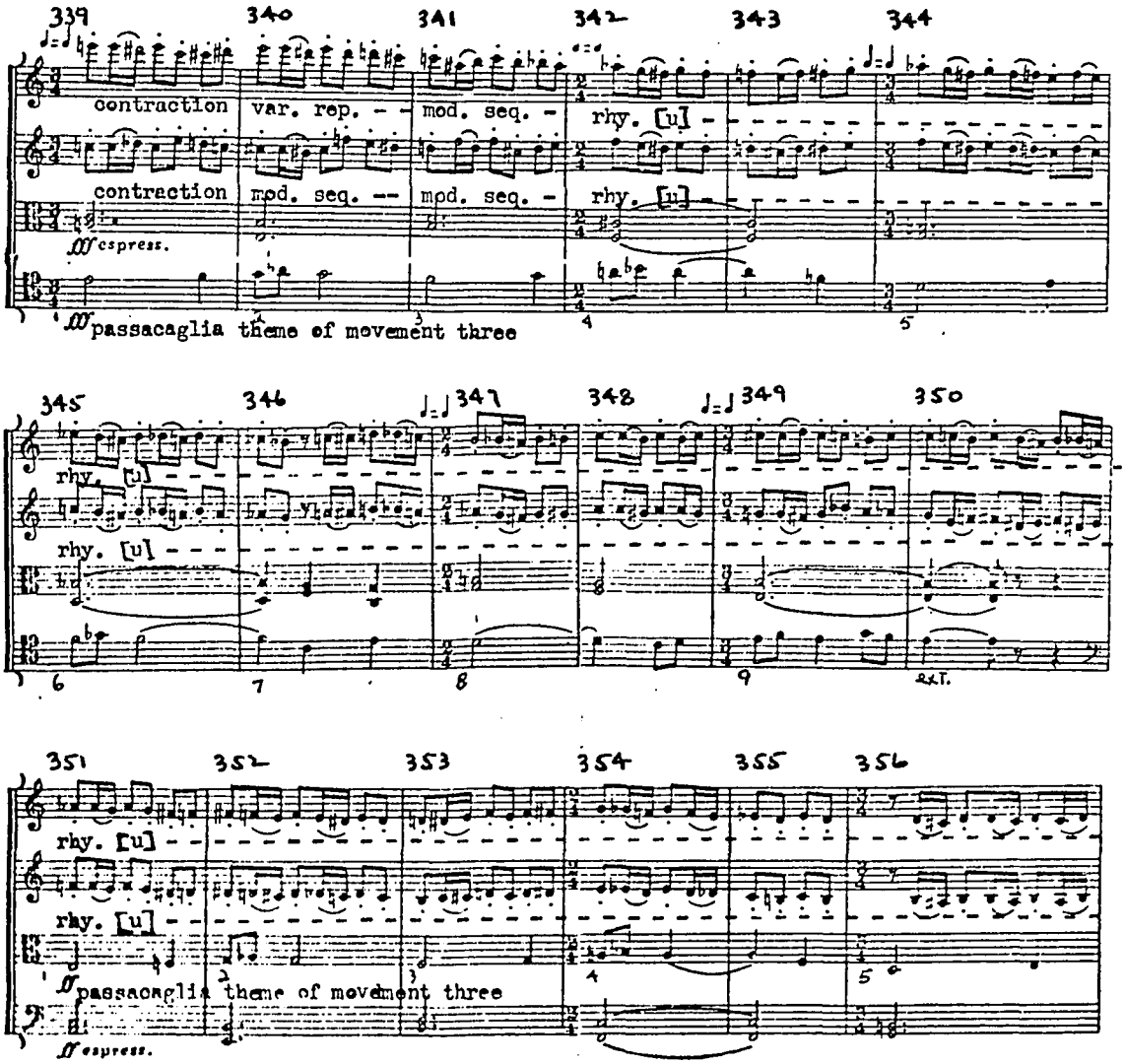
Mvt. 4 (m. 337-338)



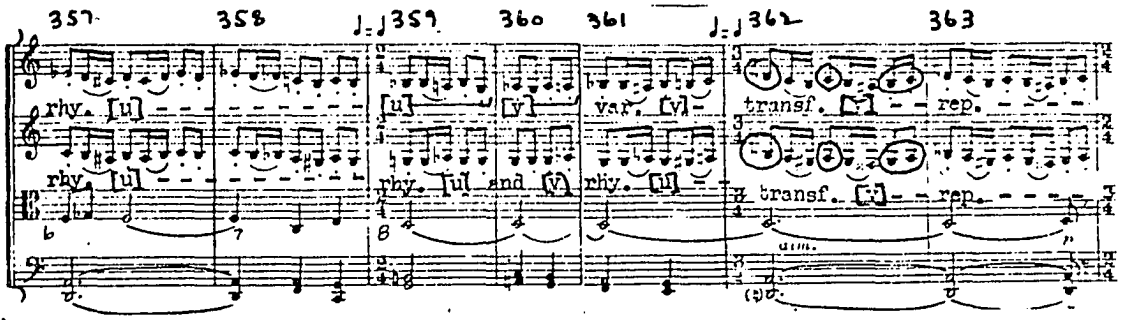
Continued investigation will show that this pattern quickly gives way to a reintroduction of chromaticism in the first and second

violin (m. 340) while the cello states the passacaglia theme. Thus the struggle of chromaticism versus the m2/M2/m2 pattern is renewed. The mechanics are much the same as the whole tone versus the m2/M2/m2 pattern emphasis which was observed in movement two (see pp. 351-352).

DEVELOPMENT continued



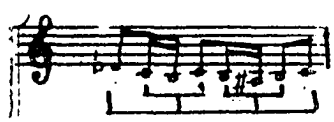
DEVELOPMENT continued



At measures 339-350 of the line score the passacaglia theme recurs in the cello. The original second violin and viola lines are presented here by viola in double stops. Measure 339 in the first and second violin is a contraction of the varied recurrences of motives [u] and [v] at measures 337-338. This contraction is accomplished by omission of the first two pitches of measure 338. The first violin contour of measure 362 as shown in example 7:41 may be a transformation of motive [v] by retrograde and application of the ♩♫♩ rhythm of motive [u].

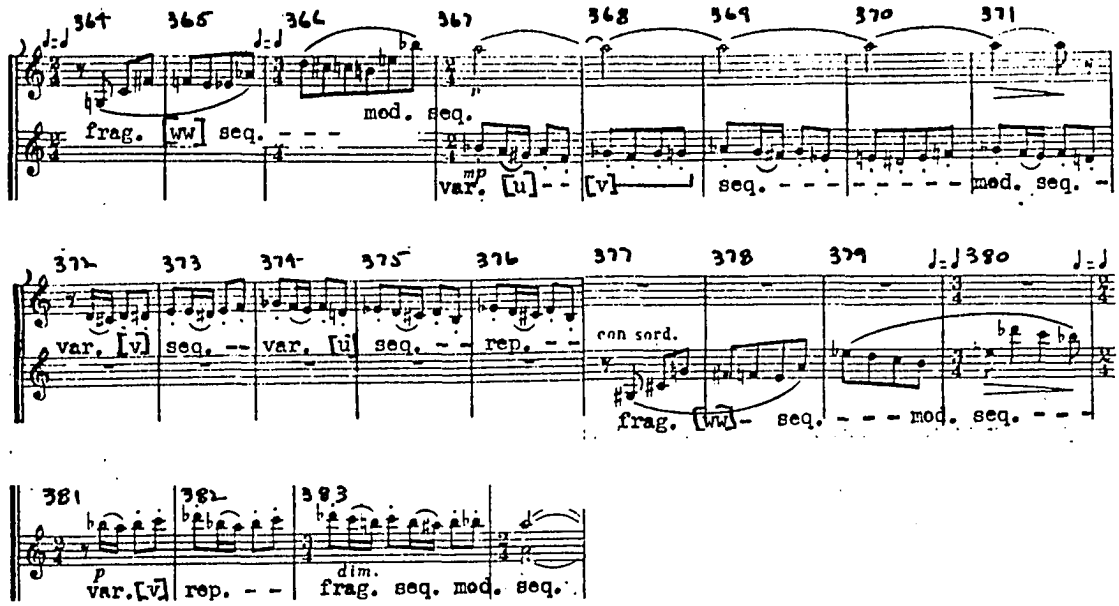
Ex 7:41

Mvt. 4 (m. 362)



transf. [v]

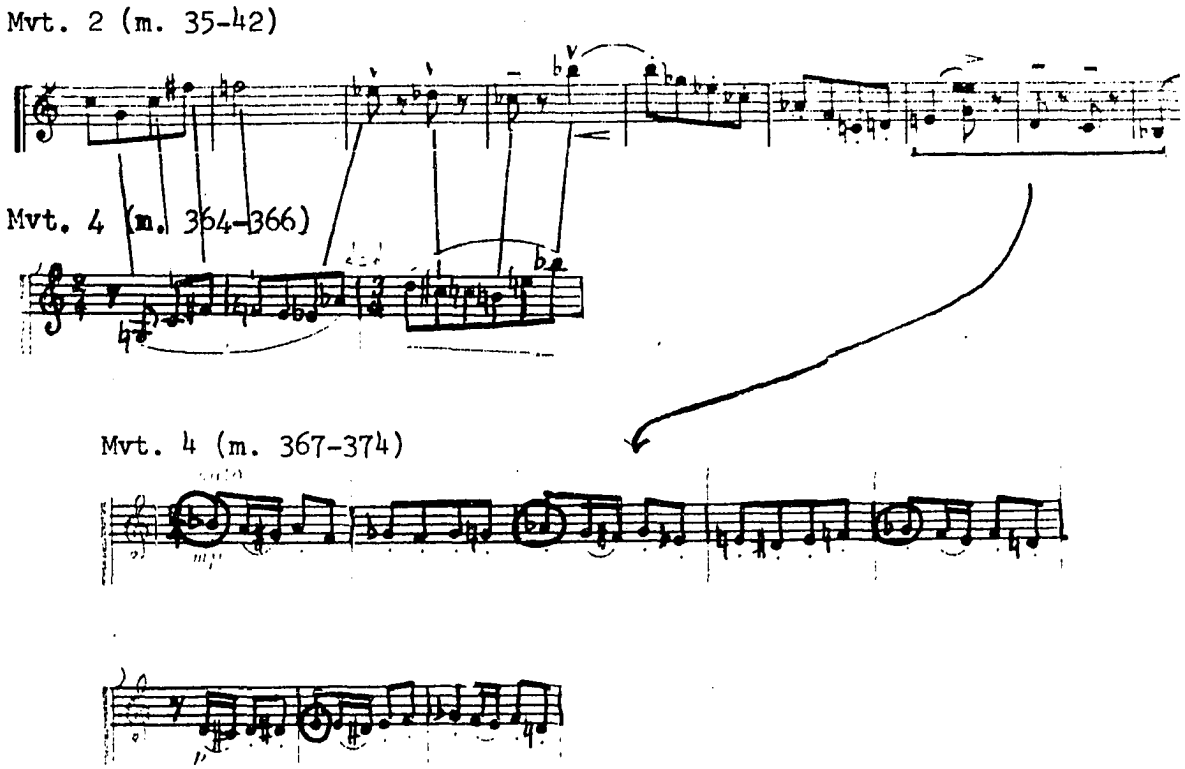
RETRANSITION



Measure 364 marks the beginning of a twenty measure retransition from the development section to the recapitulation of theme IIa which begins at measure 384. Attention is directed to the first violin contour at measures 364-366. The derivation of these measures as sequential treatment of a fragment of motive [ww] is logical for they are preparing for a recurrence of theme IIa.

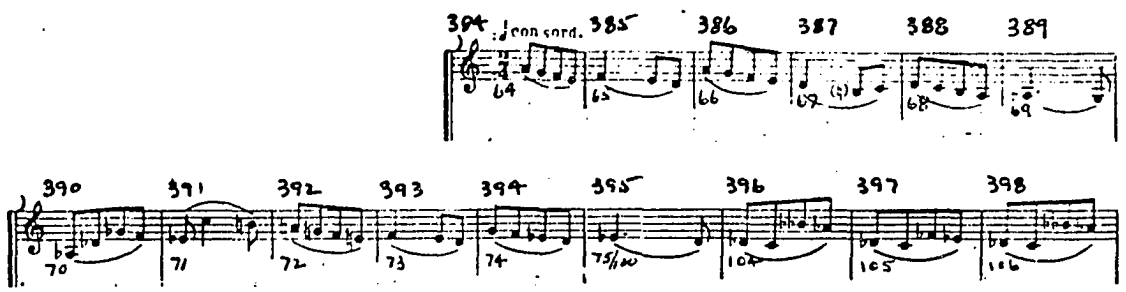
However, as on a number of previous occasions, the familiar sound of this contour (m. 364-366) invites further study. As shown in example 7:42 the contour of these measures suggests a transformation of measures 35-38 of movement two which is achieved by octave displacement, diminution, and addition of pitches.

Ex. 7:42

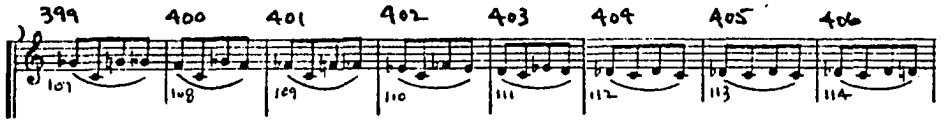


It is further noted that measures 35-38 of movement two prepared for a recurrence of theme Ia whose first aural stimulus is the whole tone motive [j]. As if to confirm a relationship with the second movement, measures 364-366 of movement four are followed by a sequence pattern in the second violin (m. 367-374) which gives prominence to a descending four note whole tone pattern (b^{b}-a^{b}-g^{b}-e) in the initial pitch of each succeeding two measures.

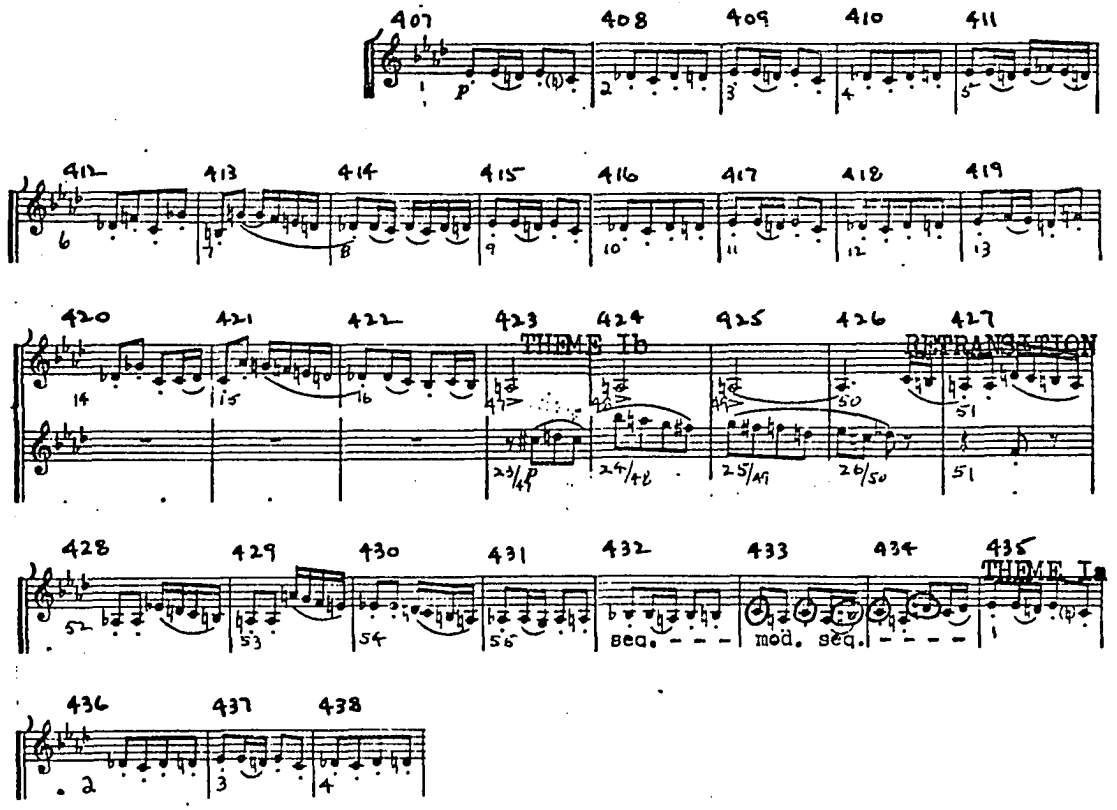
THEME IIa



THEME IIa continued

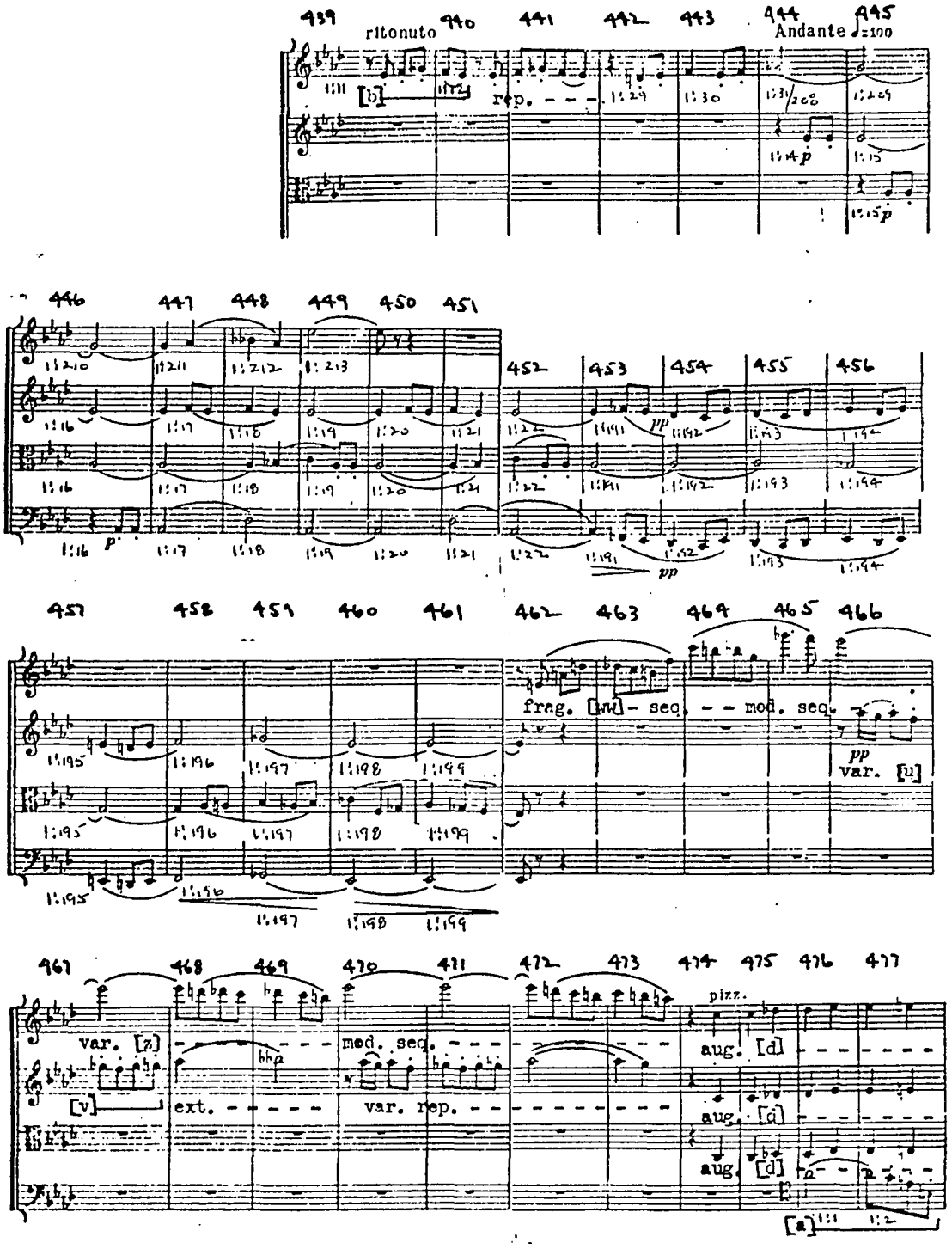


THEME Ia

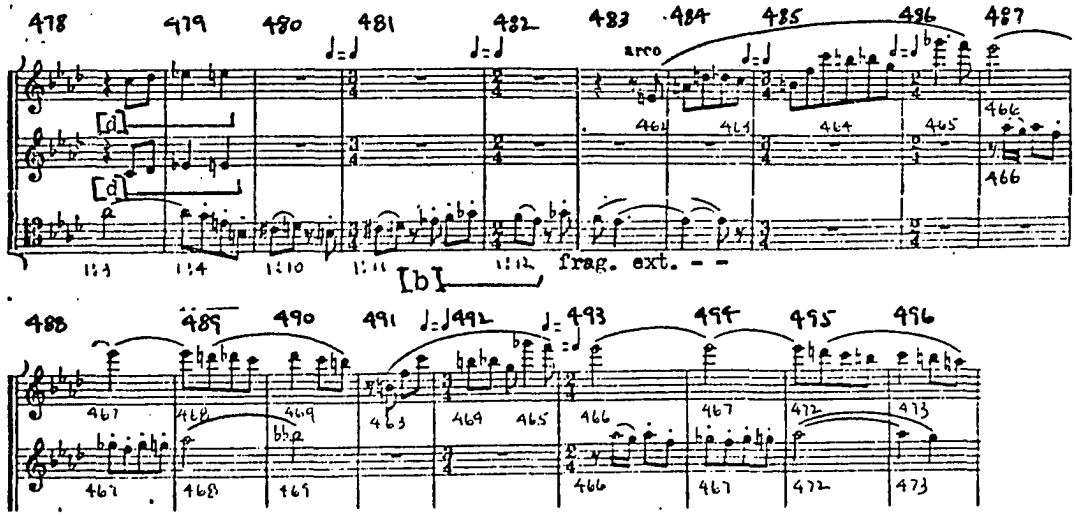


The measure numbers of previously heard linear material are detailed on the line score which shows the recapitulation of thematic areas II and I. No new techniques of motivic manipulation are noted except for the modified sequence at measures 433-434 which achieves an augmentation of the sequence pattern by added pitches.

CODA

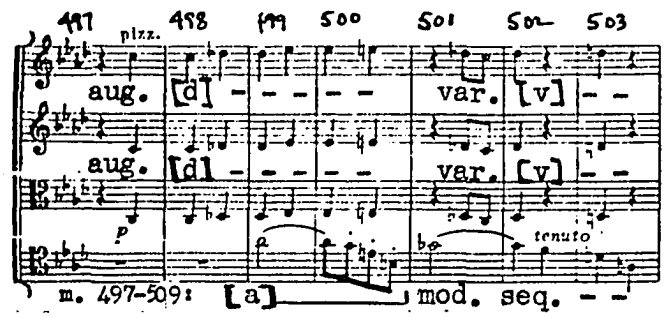

ritonuto
Andante ♩=100
rep.
frag. [w] - seq. - - mod. seq.
var. [y]
var. [z]
mod. seq.
ext.
var. rep.
pizz.
aug. [d]
aug. [d]
aug. [d]

CODA continued



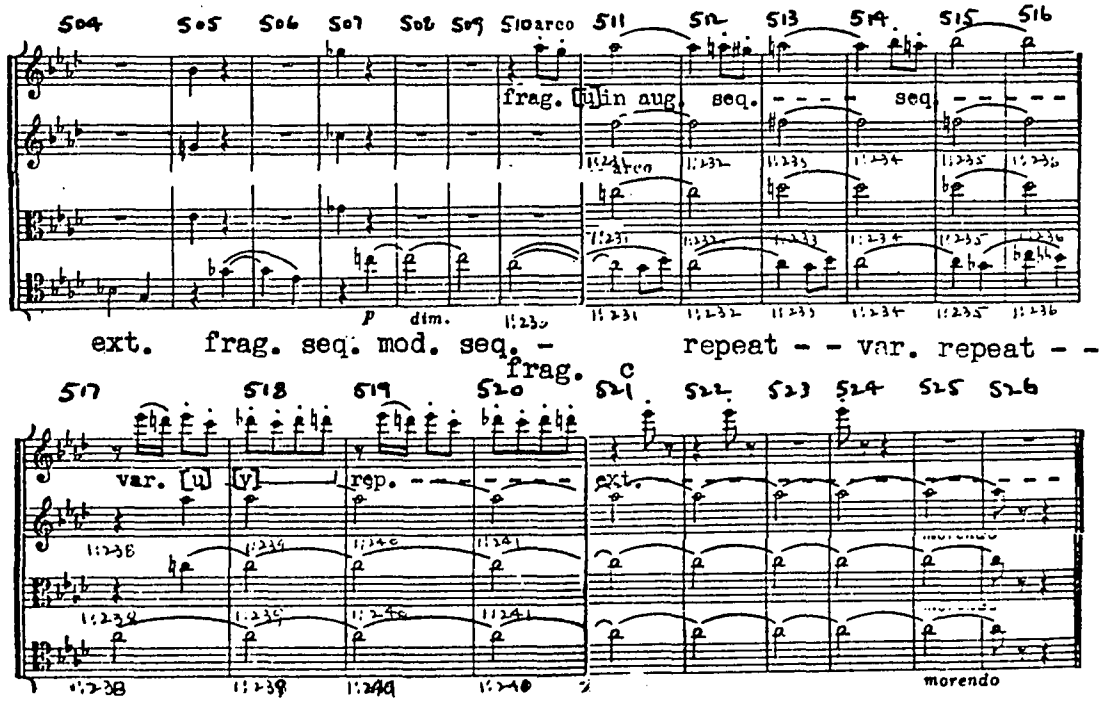
Measure 439 marks the beginning of a coda section wherein a number of the most prominent motives of movements one and four recur. The material of measures 439-461 and 474-482 is from movement one while measures 462-473 and 483-496 originated in movement four. Measures 497 to the end of the movement show a combination of linear material from both movements one and four. The original measure numbers of previously heard linear material are shown on the line score.

CODA continued



all voices show recurrence of m. 217-229 of movement one

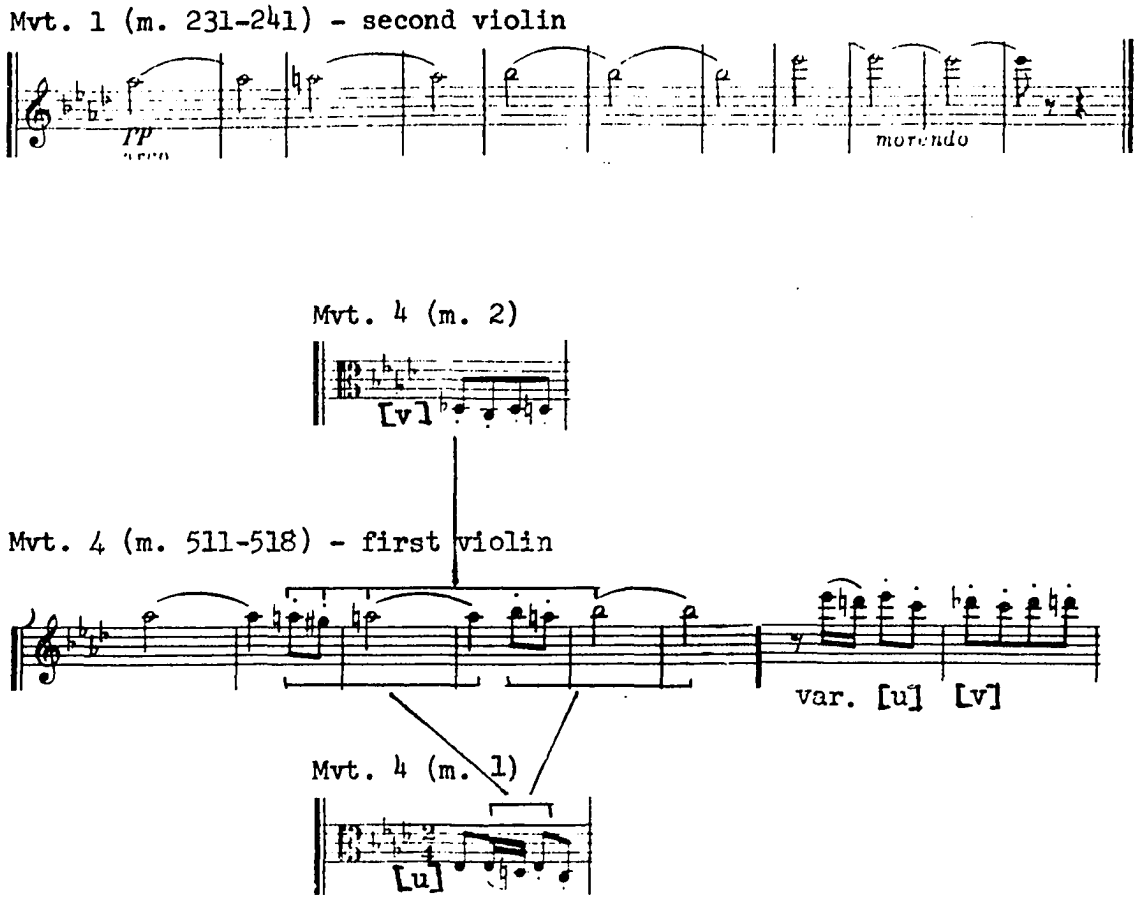
CODA continued



As shown on the line score, the closing measures (m. 497-526) of movement four are basically a recurrence of the closing measures (m. 217-241) of movement one with a five measure extension. Comparison of measures 507-520 of the line score with example 7:4 (p. 324) will show that the recurring primary linear material from the closing measures of movement one has retained emphasis on both the alternating and whole tone patterns; the addition of motives [u] and [v] now adds the chromatic element to these patterns.

As documented in example 7:43 the first violin line at measure 511-517 has a decorated version of the original contour from movement one which now shows the influence of motives [u] and [v] and anticipates their restatement of measures 517-518.

Ex. 7:43



Summary

Due to the recurrent nature of the rondo scheme, motives [u] and [v] dominate much of the linear material of movement four. The narrow range and step-wise motion of these and other prominent motives combine with pedal tones to create an overall impression of stability within the thematic areas. The atmosphere is almost static. While a number of sixteenth note patterns create motion, true linear growth is restricted by the repetitious nature of these patterns. For, while interval and directional changes within these motives are common,

rhythmic change is rare. Furthermore, the primary linear material of each of the three thematic areas uses basically only two different note values as shown in example 7:44. It is also observed that the rhythm of the prominent motive [zz] of thematic area III is an augmentation of the rhythm of motive [u] of area I. It is further shown that a strong rhythmic affinity exists between motive [yy] and the combined [u] plus [v] pattern.

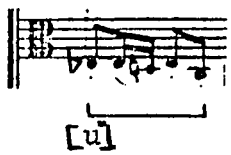
Ex. 7:44

Thematic Area I ♪ and 𝅘𝅥𝅯

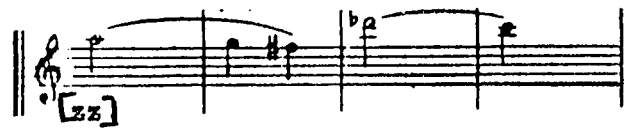
Thematic Area II ♩ and ♪

Thematic Area III 𝅗𝅥 and ♩

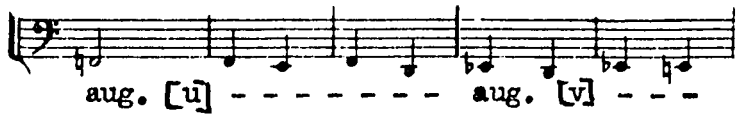
Mvt. 4 (m. 1)



Mvt. 4 (m. 143-146)



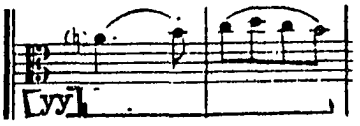
Mvt. 4 (m. 194-198)



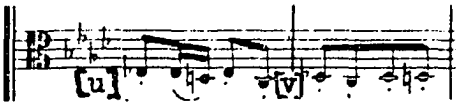
The fact that the rhythm of motive [zz] is an augmentation of the rhythm of [u] is emphasized at measures 194-198 where the 𝅗𝅥 and ♩ note values of [zz] are applied to [u] and [v].

Ex. 7:44 continued

Mvt. 4 (m. 1-2)



Mvt. 4 (m. 82-83)



In addition to the rhythmic affinities documented in example 7:44 the prominent linear materials of all three thematic areas are also unified by their primarily conjunct motion, subdued dynamics, and their use of duple meter.

The prominent m2/M2/m2 pattern emphasis of movements two and three is considerably weakened in theme Ia of movement four by the chromatic orientation of motives [u] and [v]. Motives [x] and [y] of theme Ib show a strong influence of the alternating pattern. Thematic area II shows little influence of either alternating or chromatic patterns. The strong influence of the alternating pattern in the primary melodic line of thematic area III is weakened by the chromaticism of the accompanimental contour.

Aural tension increases during the development as motives which feature alternating patterns are heard in vertical combination with motives [u] and [v] which gradually give increased emphasis to the total

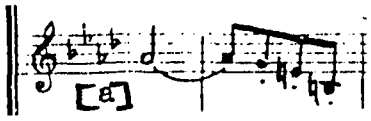
chromaticism of [v]. At the same time the m2/M2/m2 pattern touches a number of varied recurrences of prominent motives which were hitherto free of the alternating pattern. The passacaglia theme, whose motive [s] is the apex of the m2/M2/m2 pattern growth, recurs at measures 339-363 where it is accompanied by motives [u] and [v]. Beginning at measure 340 the increased half-step motion of [u] and [v] challenges the dominance of the m2/M2/m2 pattern in much the same manner that the whole tone pattern of motive [j] challenged the alternating pattern in movement two. There is an important difference here: neither pattern is granted undisputed dominance.

Summary of Unifying Factors Among Motives and Themes of the Tenth Quartet

During this investigation attention has been directed numerous times to the influence of a m2/M2/m2 scalar pattern. Motives which display this scalar pattern are prominently featured in all four movements. This pattern is implied in the first aural stimulus of movement one by motive [a] and crystallized at measures 37-38 by motive [d]. The many manifestations of the m2/M2/m2 scalar pattern and its attendant major/minor dichotomy make it the primary source of linear unity in this composition. Prominent motives of the tenth quartet which feature this pattern are shown in example 7:45.

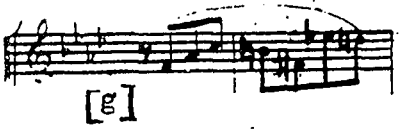
Ex. 7:45

Mvt. 1 (m. 1-2)



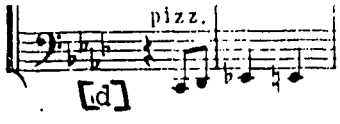
In retrospect the m2/M2/m2 scalar pattern is implicit in the a^b-g-e pattern of motive [a]. The $\underline{a^b}$ is given aural emphasis by position and duration while the $\underline{e}$ is emphasized as the root of an $\underline{e}$ M/m triad. Thus the diminished fourth a^b-e is strongly established.

Mvt. 1 (m. 111-112)

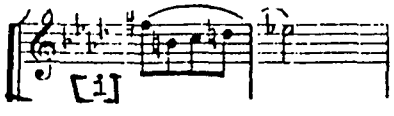


The pitches of motive [g] are contained in an alternating scale constructed from the lowest pitch $\underline{f}$: f-f#-a^b-(a)-b-c-d-e^b.

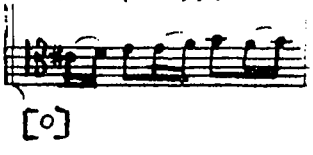
Mvt. 1 (m. 37-38)



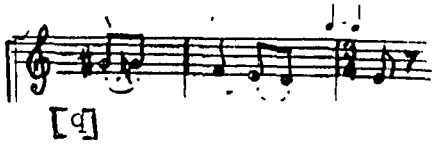
Mvt. 1 (m. 122-123)



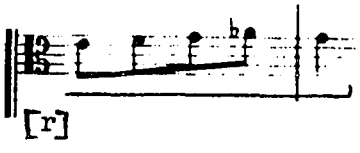
Mvt. 2 (m. 95)



Mvt. 2 (m. 113-115)

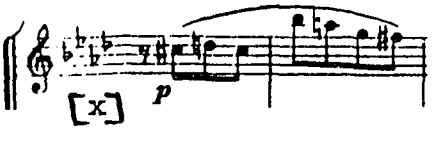


Mvt. 2 (m. 134)

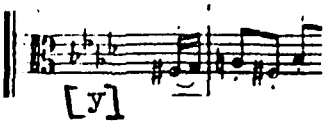


Mvt. 3 (m. 1-2)

Mvt. 4 (m. 23-24)

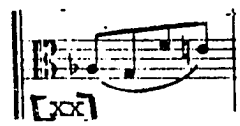


Mvt. 4 (m. 26-27)



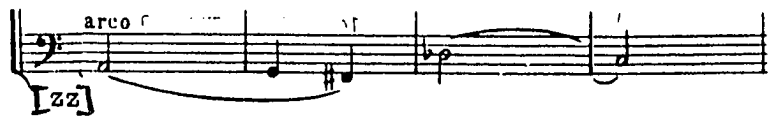
Ex. 7:45 continued

Mvt. 4 (m. 79)

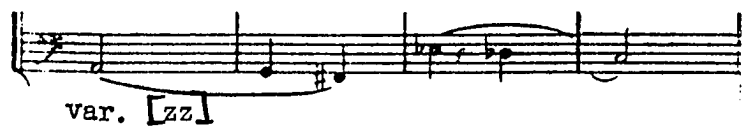


The m2/M2/m2 pattern is disguised by octave displacement.

Mvt. 4 (m. 143-146)



Mvt. 4 (m. 147-150)



The diminished fourth a-d^b is very strong in motive [zz]. When motive [zz] (m. 143-146) and its varied repeat (m. 147-150) are considered together, they describe an alternating scale from their lowest pitch f#: f#-g-a-(b^b)-c-d^b-e^b-(e).

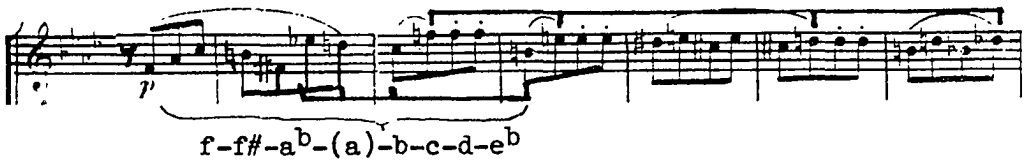
In addition to its influence upon the contour of a number of prominent motives, the alternating pattern may be observed as the skelton of many longer contours. The lines shown in example 7:46 have been selected as being among the more subtle manifestations of the influence of this scalar pattern within longer contours.

Ex. 7:46

Mvt. 1 (m. 25-32)

This expansion by filling serves to anticipate the statement of motive [d] which is the first prominent motive to display the m2/M2/m2 pattern.

Mvt. 1 (m. 111-117)

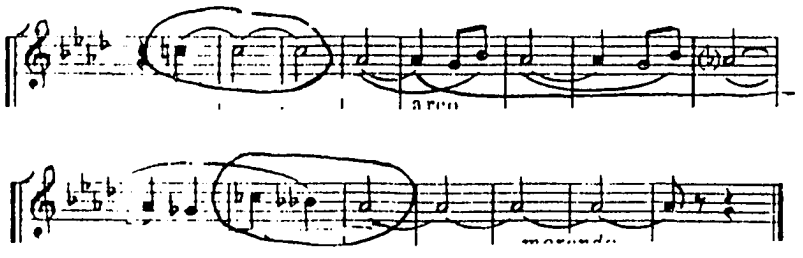


This expansion by filling forms the first phrase of theme IIIa. Note that several different patterns may be heard.

Mvt. 1 (m. 206-212)

This expansion by filling forms the first phrase of theme Ib in the recapitulation section. Its basic contour of f-g♭-a♭-b♭♭-a♭ anticipates motive [r] of movement two.

Mvt. 1 (m. 227-241)



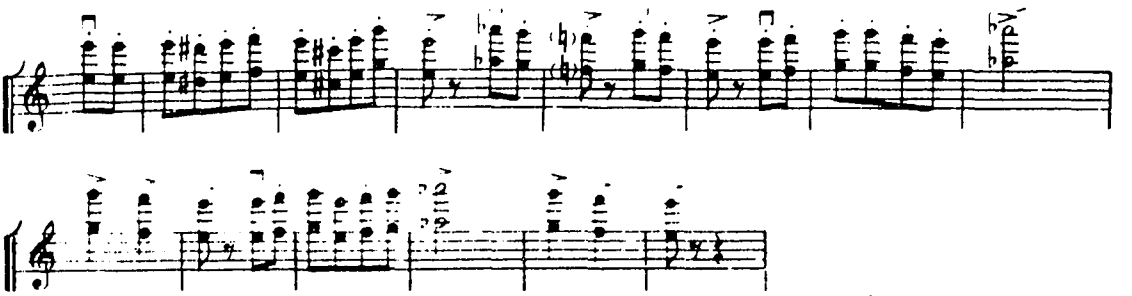
This expansion by filling forms the closing measures of the coda section.

Ex. 7:46 continued

Mvt. 2 (m. 48-55)

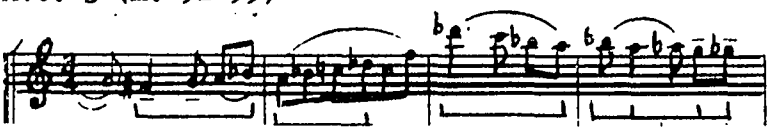
The m2/M2/m2 scalar pattern occurs in double-stops as an accompanimental figure (e-f-g and f-g-a^b).

Mvt. 2 (m. 305-318)



In this excerpt the m2/M2/m2 scalar pattern (e-f-g-a^b) brings the second movement to a close and prepares the ear for the passacaglia theme of movement three (see motive [s]).

Mvt. 3 (m. 52-55)



This is an example of the growth of a line by means of continuous manipulation of the m2/M2/m2 pattern.

Mvt. 4 (m. 290-293)

An example of growth of a line by means of continuous manipulation of the m2/M2/m2 pattern.

Investigation of the score shows the presence of one or more of the alternating pattern motives both singly and/or in combination on nearly every page. If the original motives are not present, their influence is evident through some form of variation, transformation, or permutation. The cumulative affect, first upon the unconscious and then upon the conscious mind, is most certainly a chief reason why the passacaglia theme of movement three seems so right and inevitable when it makes its appearance.

The detailed investigation has shown that throughout the course of the first two movements the m2/M2/m2 pattern has emerged ever more prominently. In movement three this pattern is featured in motive [s] which is the first aural stimulus of the passacaglia theme. The repetition of this theme, due to the nature of the passacaglia scheme, causes emphasis to be placed upon [s]. In spite of this described increase in the prominence of the m2/M2/m2 scalar pattern in the course of successive movements, there is a possibility that the recurrence of the passacaglia theme at measures 339-363 of movement four would seem out of place were it not for the continued influence of the m2/M2/m2 pattern in the fourth movement through motives [x], [y], [xx], and [zz].

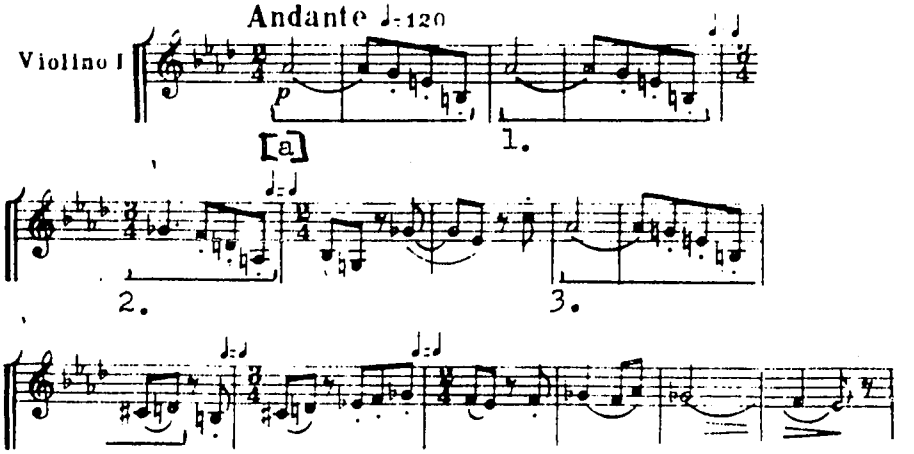
This investigation has shown that the m2/M2/m2 motives which precede motive [s] present a continuous metamorphosis of this pattern which reaches its apex in motive [s]. The m2/M2/m2 motives of movement four do not exhibit any systematic growth process. They serve to create familiar aural surroundings for a recurrence of the passacaglia theme as

the climax of the development section of movement four.

Recurrence of an initial motive either immediate or in close proximity is a characteristic which was observed in ten of the fourteen themes of this quartet. These themes are shown in example 7:47.

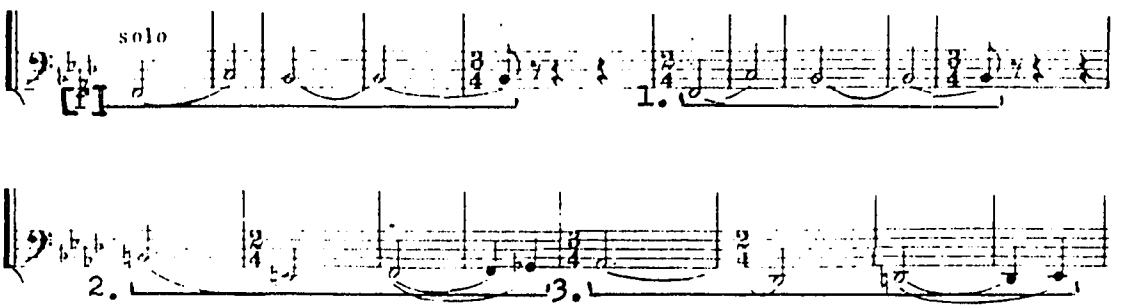
Ex. 7:47

Mvt. 1 (m. 1-15) - theme Ia



The first recurrence is an exact repetition of the opening motive [a], the second recurrence is a sequence, the third recurrence is a duplication of [a] with extension.

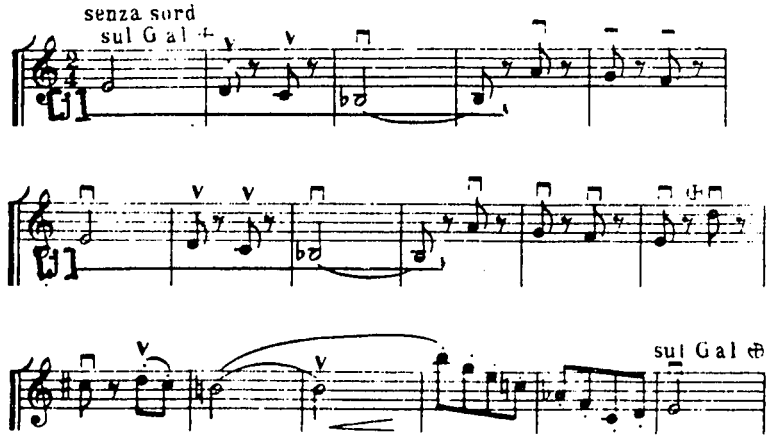
Mvt. 1 (m. 73-92) - theme IIa



Ex. 7:47 continued

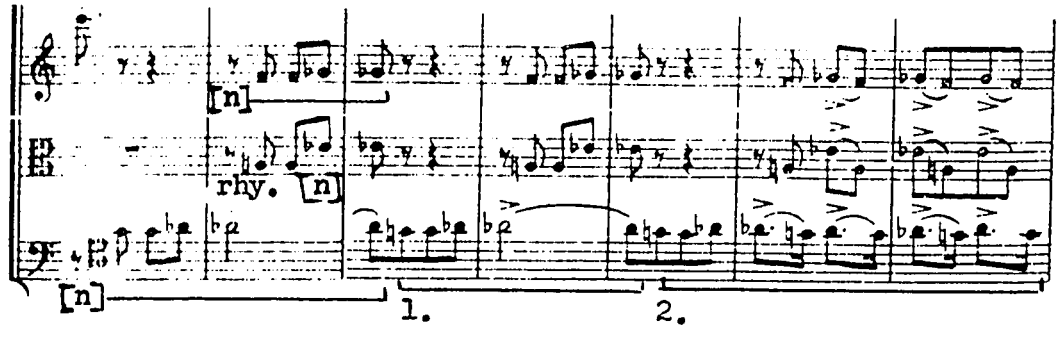
The first recurrence is a repeat of motive [f], the second recurrence is an inversion, the third recurrence is a sequence of the second, and the fourth recurrence is a diminution of [f] with expansion of the first interval.

Mvt. 2 (m. 1-17) - theme Ia

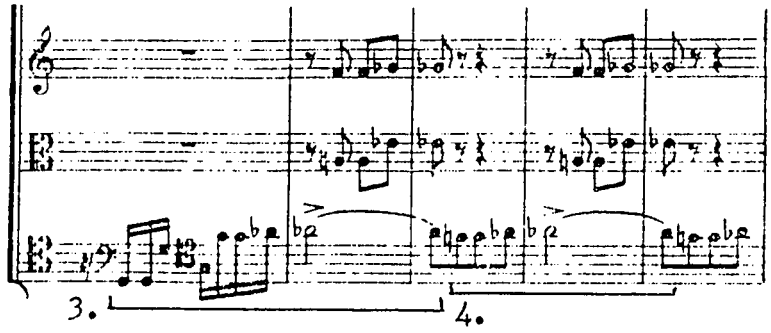


The opening motive [j] recurs at measures 6-9.

Mvt. 2 (m. 82-93) - theme IIa

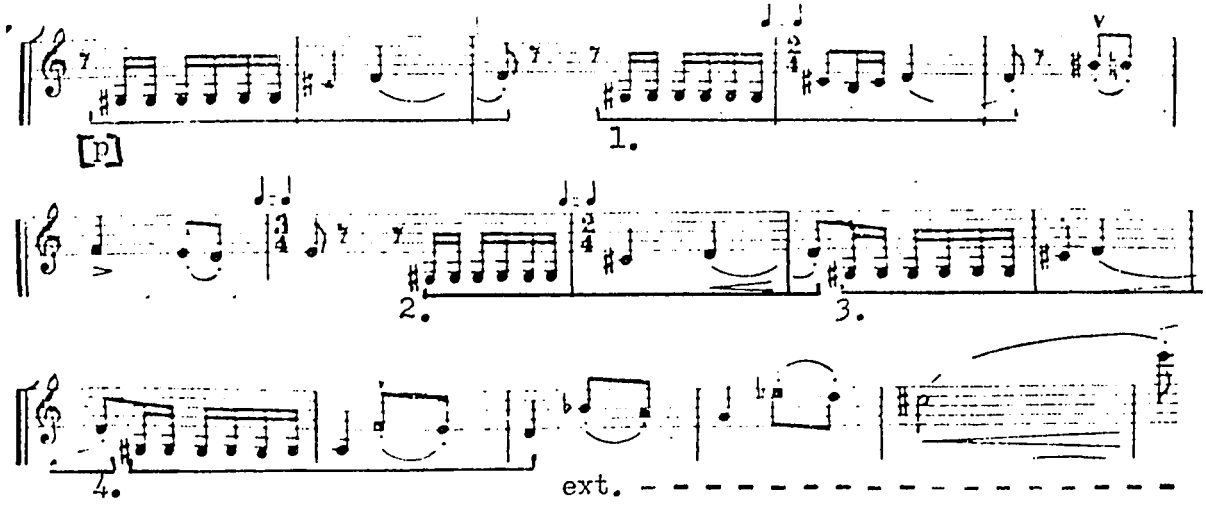


Ex. 7:47 continued



The first recurrence is a repeat of the initial motive [n], the second recurrence is varied by extension, the third recurrence is varied by octave displacement and rhythmic change, and the fourth recurrence is a duplication of [n]. The second violin shows imitation of [n].

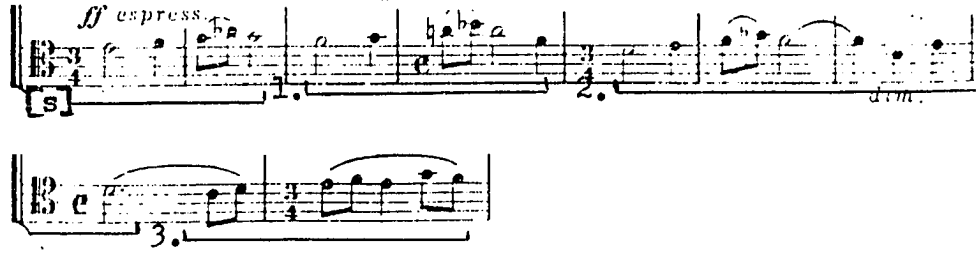
Mvt. 2 (m. 109-123) - theme IIb



The first recurrence of motive [p] is varied by addition of a neighbor tone, the second and third recurrences are a duplication of [p], and the fourth recurrence is varied by interval contraction, added pitches, and extension.

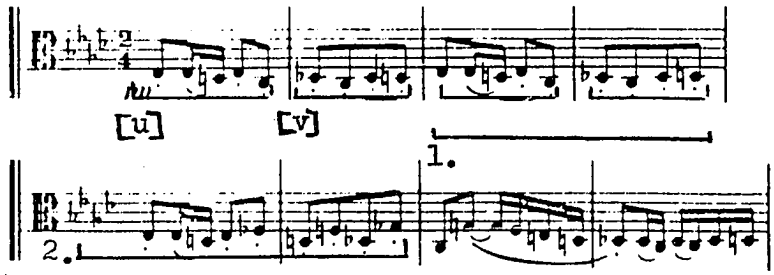
Ex. 7:47 continued

Mvt. 3 (m. 1-9) - Ia - passacaglia theme



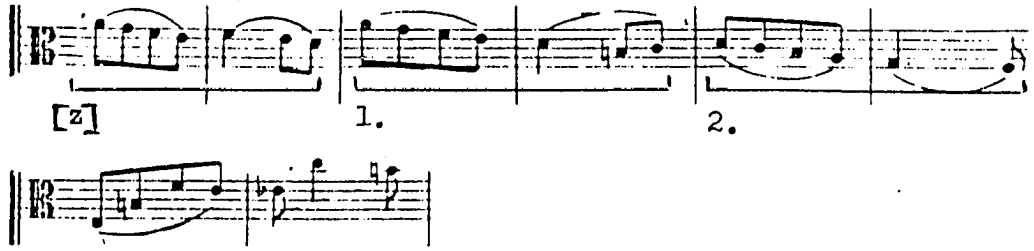
Each of the three recurrences of motive [s] is a modified sequence.

Mvt. 4 (m. 1-8) - theme Ia



The first recurrence is a repeat of the first two motives while a second recurrence features only the rhythm of these motives.

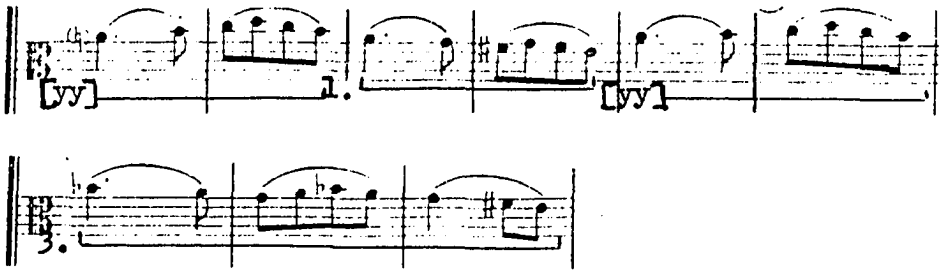
Mvt. 4 (m. 64-71) - theme IIa



The first recurrence is varied by a change of direction in its second fragment while the second recurrence is a sequence of the first with omission of the penultimate note.

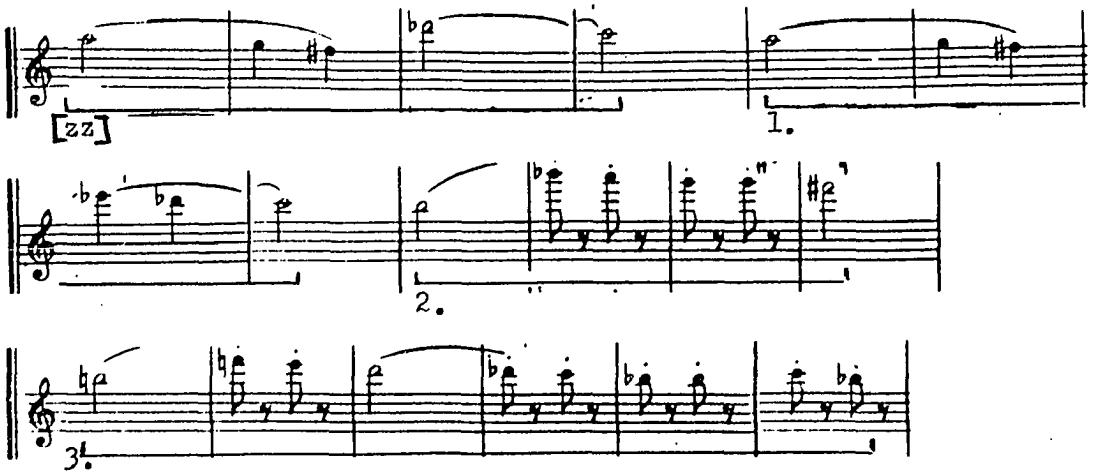
Ex. 7:47 continued

Mvt. 4 (m. 82-90) - theme IIb



The first recurrence is a partial inversion, the second recurrence is a replication of the original motive [yy], and the third recurrence is a modified inversion with extension.

Mvt. 4 (m. 143-160) - theme IIIa

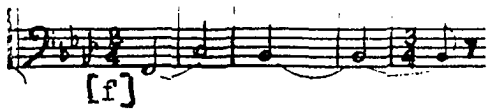


The first recurrence is varied by addition of an appoggiatura to the penultimate pitch, the second recurrence is varied primarily by octave displacement, the third recurrence is a sequence varied by contraction of the initial interval and by extension.

Five of the fourteen themes of this quartet display outstanding economy of material in that they grow from manipulation of a single motive. Although displaying more than one prominent motive the growth of five more themes is dominated by manipulation of an initial motive. A third catagory includes two themes which grow from manipulation of two initial motives. The motives of these twelve themes are displayed for comparison in example 7:48.

Ex. 7:48

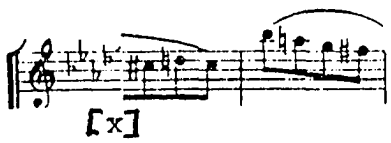
Catagory I

Mvt. 1 - theme IIa 

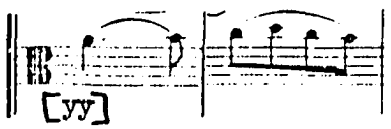
line score p. 316

Mvt. 3 - theme Ia 

line score p. 355

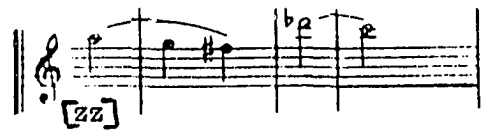
Mvt. 4 - theme Ib 

line score p. 374

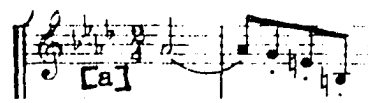
Mvt. 4 - theme IIb 

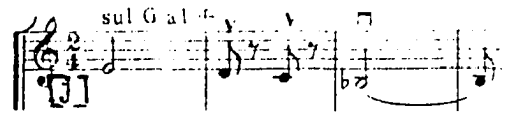
line score p. 378

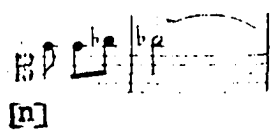
Ex. 7:48 continued

Mvt. 4 - theme IIIa  line score p. 381

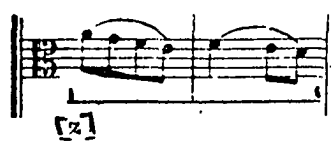
Catagory II

Mvt. 1 - theme Ia  line score p. 312

Mvt. 2 - theme Ia  line score p. 329

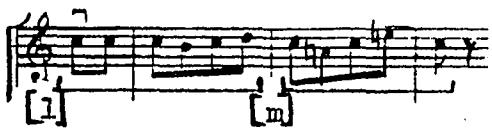
Mvt. 2 - theme IIa  line score p. 334

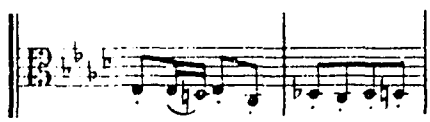
Mvt. 2 - theme IIb  line score p. 337

Mvt. 4 - theme IIa  line score p. 377

Ex. 7:48 continued

Catagory III

Mvt. 2 - theme Ib  line score p. 331

Mvt. 4 - theme Ia  line score p. 371

Comparison of the motives involved in the growth of these twelve themes disclosed striking contour and rhythmic affinities: (1) the five motives of catagory I share a basic convex contour; (2) in catagory II motives [a] and [j] share a basic descending contour and rhythmic affinity while [z] shares their basic contour; (3) motives [n] and [p] of catagory II share a basic ascending contour and a rhythmic affinity; (4) the two pairs of motives in catagory III share a basic contour. Motives [l] and [m] and their varied recurrence were observed in example 7:26 (pp. 372-373) as contributors in the emergence process of [u] and [v].

Twenty-four of the thirty prominent motives of the tenth quartet are confined within the range of a perfect fifth or less. Of the remaining six motives, two have a range of a major sixth, two cover a minor seventh, and two have a range of more than an octave. Thirteen of the thirty motives move in totally conjunct motion while ten may be considered as basically conjunct in that they contain only one skip. Only motive [m] moves in totally disjunct motion; the remaining six motives may be considered as basically disjunct in that they tend to be dominated by skips while containing some conjunct motion.

Octave register tends to be a unifying factor among the motives of this quartet for, as this investigation has already suggested, the initial statement of twenty-eight of the prominent motives confine themselves to a single octave. The octave from middle c to two-line c is used for the initial statement of sixteen of the prominent motives. Of the remaining fourteen, five are first stated in the two-line c octave, five in the small c octave, and two ir the great c octave. The initial statements of motives [d] and [zz] are presented in octaves by three instruments.

Unity of primary linear materials within the tenth quartet is also served by instrumentation or timbre, for the violin sound has been selected for more than half of the total of initial statements and restatements of the various themes: six of the fourteen themes are initially stated by first violin as are nineteen recurrences of primary melodic material; the second violin makes no initial statements of priary melodic material but has three recurrences. The cello has the initial statement of three of the themes and six recurrences while initial presentation of three of the themes is made by viola which has two recurrences. Of the two remaining themes, IIIa of movement four is stated in octaves by the three lower instruments while Ib of movement one is more a texture woven by the three lower instruments than a "theme" as the term is commonly used. Thus it is observed that twenty-eight of the forty-three initial statements of themes and their recurrences are presented in violin timbre.

Ten of the fourteen themes of this quartet are initially stated either unaccompanied or with only the most minimal accompaniment. This fact contributes to an easy accessibility of the thematic materials. This accessibility facilitates remembrance of the linear material and assists the ear in recognition of the recurrences of motives and themes as they delineate the formal structure.

Movements one, two, and four of the tenth quartet are composed basically in duple meter while the third movement is in triple meter. This means that all but four of the thirty motives are unified through meter: motives [o], [s], and [t] are in triple meter while motive [b] involves a meter change from triple to duple. Further investigation of the motives according to metric placement (accented versus unaccented) disclosed that they are about evenly divided: thirteen motives begin on the first beat of the measure while the remaining motives begin with an anacrusis. The brevity of the prominent motives has a unifying effect; the length of these motives ranges from one to four measures and from four to nine notes. Due to tempi changes the four measure motives ([f] and [zz]) do not necessarily fill the longest temporal span.

The Processes of Anticipation and Emergence

Detailed investigation of the line score has revealed that the m2/M2/m2 scalar pattern is prevalent in all movements as the prime unifying factor among the linear materials of this quartet. The contributions of this pattern to the emergence process of motive [s] of

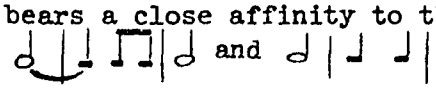
movement three is traced in example 7:9 (pp. 335-336). The emergence process of motives [u] and [v] of movement four is documented in example 7:26 (pp. 372-373).

Operative at the next highest architectonic level are the anticipations between adjacent movements. The most notable of these is the anticipation of the first aural stimulus (motive [j]) of movement two by prominent contours of movement one. These anticipations are shown in example 7:49.

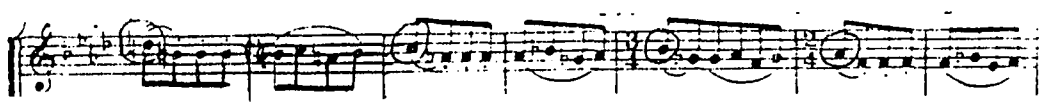
Ex. 7:49

Mvt. 1 (m. 47-54)

Anticipation of the whole tone pattern of motive [j] is heard for the first time at measures 47-54 of movement one. The longer temporal span of the d gives it weight as the first note of a descending whole tone pattern. Although the e thus becomes an auxiliary, e does fit the whole tone pattern and the e-d-c-b^b pitch frame of [j]. The rhythmic pattern of the pitches of this anticipation also bears a close affinity to the rhythm of [j]:



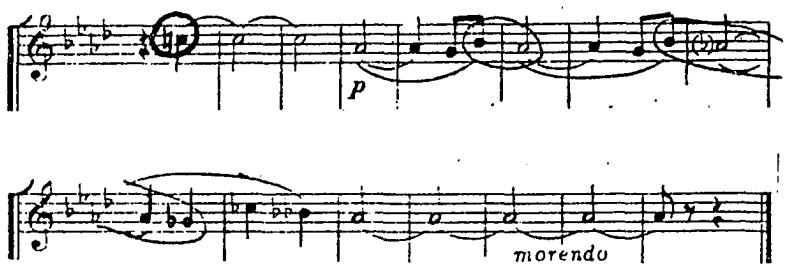
Mvt. 1 (m. 126-132)



In this anticipation of [j] the initial pitch of each succeeding sequence delineates a four note descending whole tone pattern: d-c-b^b-a^b.

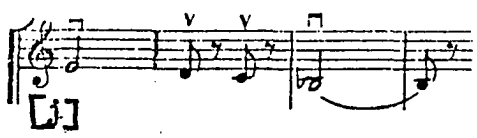
Ex. 7:49 continued

Mvt. 1 (m. 227-241)



The final anticipation of motive [j] is heard in the closing measures of movement one. At measures 227-235 the relatively longer temporal span of the c holds that c in the aural memory so that the descending whole tone pattern c-b^b-a^b-g^b is emphasized. The first aural stimulus of movement two is motive [j].

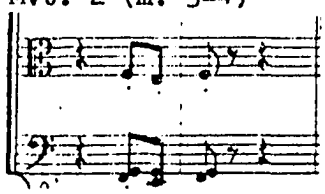
Mvt. 2 (m. 1-4)



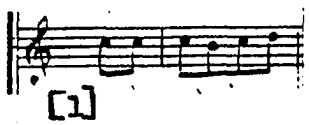
Shown in example 7:50 are three instances of anticipation which occur between adjacent themes of the same movement.

Ex. 7:50

Mvt. 2 (m. 3-4)



Mvt. 2 (m. 30-31)

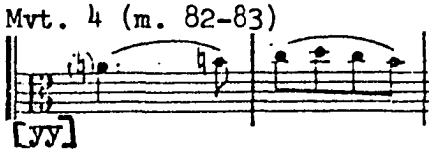


The viola and cello at measures 3-4 accompany theme Ia of movement two with a figure which anticipates the lower neighbor tone of motive [1].

Ex. 7:50 continued

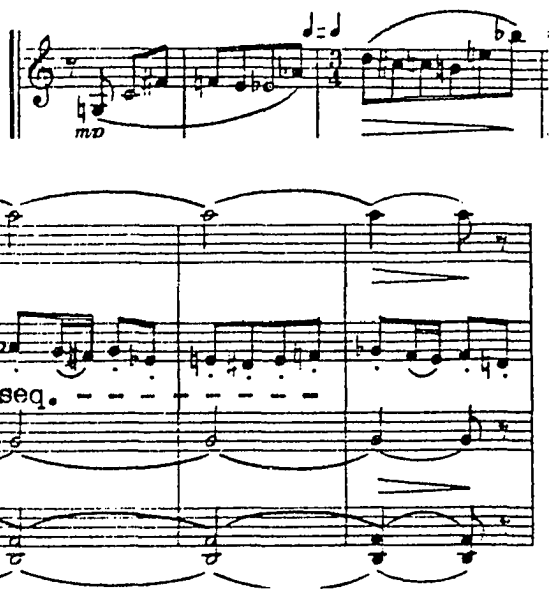
Mvt. 4 (m. 76-77)

Mvt. 4 (m. 82-83)



In the course of the first statement of theme IIa of movement four the viola (m. 76-77) anticipates the contour of motive [yy].

Mvt. 4 (m. 364-371)



This is the beginning portion of a retransition which leads from the development section of movement four to a recurrence of theme IIa in the recapitulation section. The technique here is interesting for it establishes two conflicting expectations in the aural memory. The first violin contour at measures 364-366 suggests motive [ww] from theme IIa; the first violin, viola, and cello at measures 367-371 anticipate the d-a double pedal which is a prominent characteristic of the accompaniment of theme IIa of movement four. Thus an anticipation for a return of theme IIa is established.

At the same time, the second violin is stating motives [u] and [v] in sequence at measures 367-

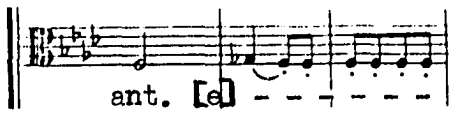
Ex. 7:50 continued

371 which creates an expectation for a return of theme Ia of movement four. The conflict of expectations thus aroused is resolved by a recurrence of theme IIa at measure 384. This resolution of the conflict is unexpected because the anticipation of the two most prominent motives ([u] and [v]) of theme Ia creates far stronger expectations for a return of Ia which does not recur until measure 407.

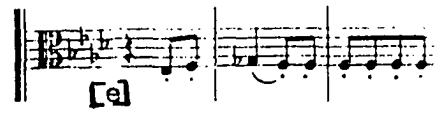
Perhaps of less importance to structural unity but of no less interest as stage setting devices are the anticipations shown in example 7:51. These anticipations foretell the appearance of motives and themes immediately before or in close proximity to their original statement or before structurally important recurrences.

Ex. 7:51

Mvt. 1 (m. 67-69)



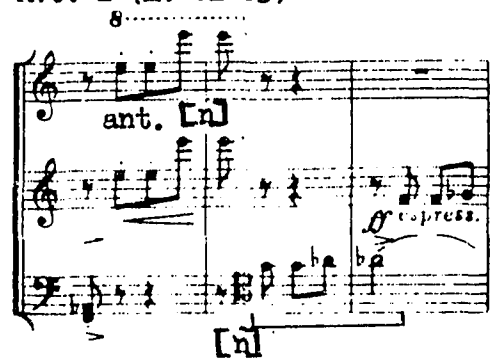
Mvt. 1 (m. 72-74)



The viola at measures 67-69 anticipates the rhythm, pitch level, and staccato of motive [e].

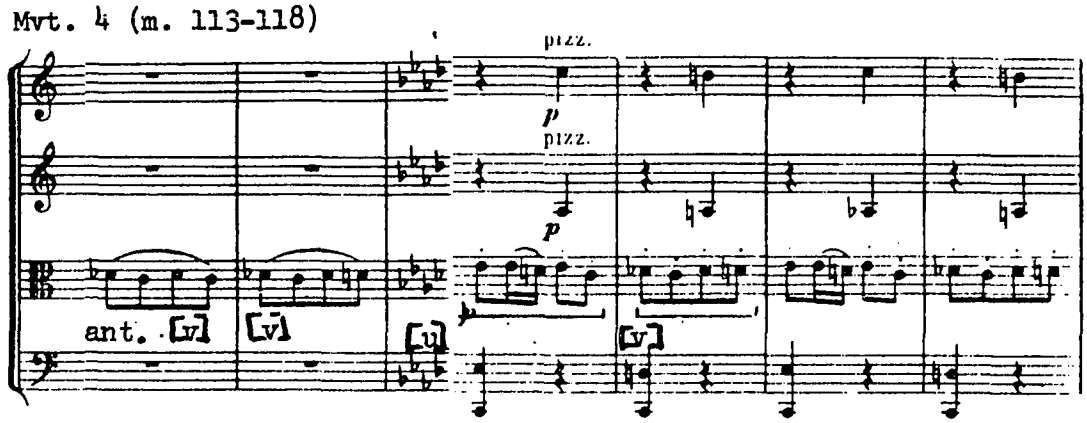
Ex. 7:51 continued

Mvt. 2 (m. 81-83)



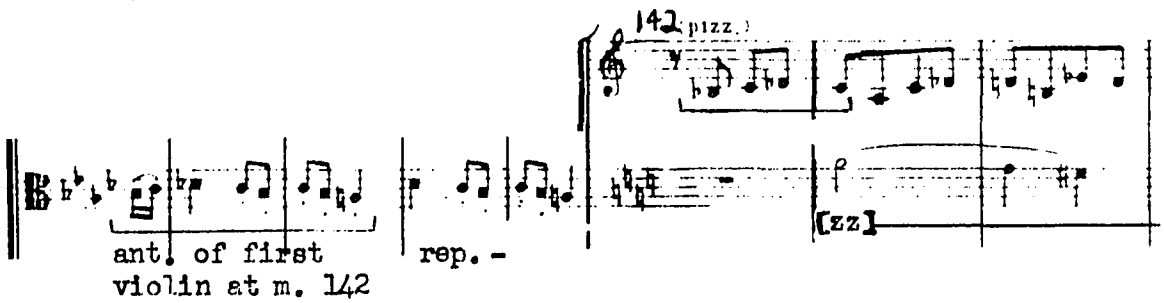
The first and second violin (m. 81-82) anticipate the rhythm of motive [n].

Mvt. 4 (m. 113-118)

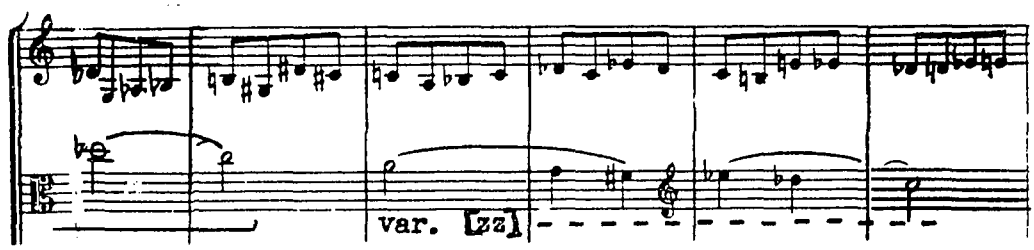


The viola (m. 113) uses a written-out trill to anticipate a recurrence of motive [v] (m. 114) which in turn anticipates the return of theme Ia of movement four at measure 115.

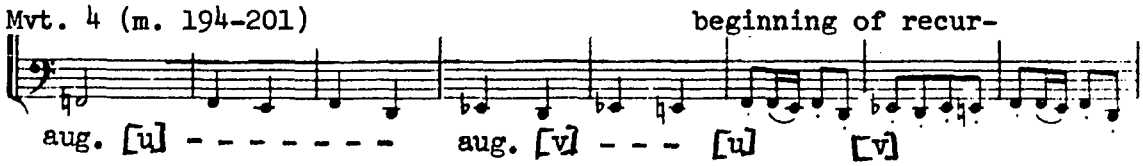
Mvt. 4 (m. 138-150)



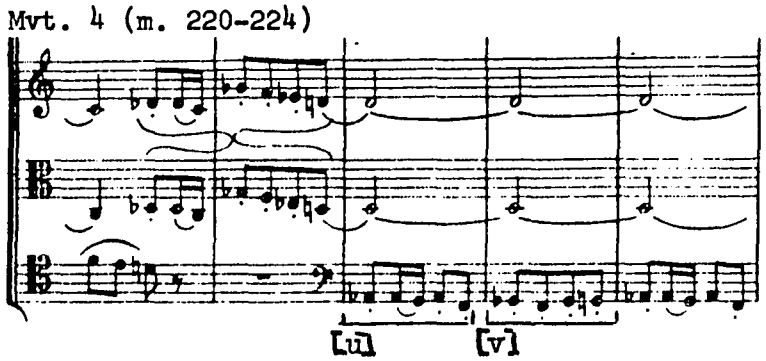
Ex. 7:51 continued



The viola (m. 137-141) anticipates the contour and pitch level of the pizzicato accompaniment of theme IIIa of movement four by the first violin at measure 142. The rhythm of the viola contour at measures 138-141 anticipates the first recurrence of motive [zz] (m. 147-150) by diminution.



The cello (m. 194-198) anticipates a recurrence of theme Ia of movement four with an augmentation of motives [u] and [v].



The second violin and viola (m. 220-221) use the rhythm and staccato of motives [u] and [v] to anticipate a recurrence of theme Ia of movement four at measure 222 in the cello.

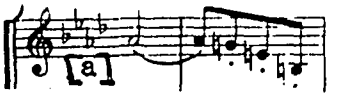
Non-Linear Relationships

A detailed investigation of the score has revealed few apparent instances of the involvement of the pitches or the intervals of prominent motives in non-linear relationships. Although involvement of prominent motives in the initial intervals of sequence construction, entrances of imitation, vertical structures, and tonal centers is limited, this involvement does contribute to structural unity.

The A^b-E tonal frame of the four movements emerges from the first aural stimulus motive [a]. The pitch $\underline{a^b}$ is emphasized by position and duration while motive [a] exhibits a strong tendency for an E tonal center. The following chart summarizes the prominent tonal centers of the four movements of the tenth quartet.

PROMINENT TONAL CENTERS OF THE TENTH QUARTET

Mvt. 1 (m. 1-2)



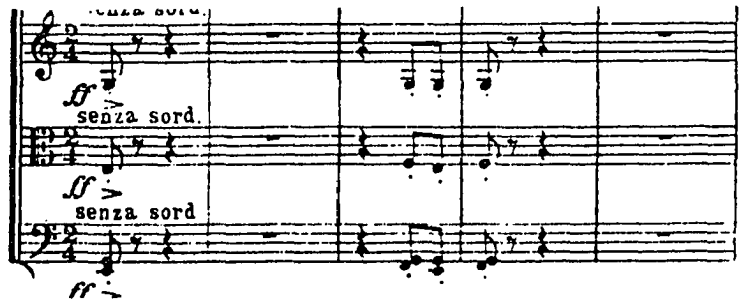
Movement 1:	I		II		III		I		II		III	
	A^b:		F:		F:		A^b:		A^b:		A^b:	
Movement 2:	I					II			I	II	I	
	E:	F:	E:	F:		A^b:	C#:	B^b:	E:	F:	E:	
Movement 3:	Passacaglia Theme						Coda					
	E:						E:	A^b:				
Movement 4:								Passacaglia Theme				
	A^b:		D:		A^b:	F#:		E:		D:	A^b:	

In addition to the observation made concerning the influence of motive [a] upon the A^b-E-E-A^b scheme of the primary tonal centers of the four movements, there are two additional observations to be made from this chart. With the exception of the F# tonal center of thematic area III of movement four, all tonal centers may be found as pitches of an alternating scale constructed from the A^b tonal center: a^b-b^b-(b)-c#-d-e-f-(g). The tonal centers of movement four describe a whole tone pattern: a^b-f#-e-d.

The detailed analysis has shown that the procedures in this composition are primarily linear. Thus, there are few vertical structures and the influence of prominent motives upon vertical structures remains slight. Example 7:52 documents the influence of the prominent m2/M2/m2 scalar pattern upon the vertical structures which occur in support of the initial statement of thematic area I of movement two.

Ex. 7:52

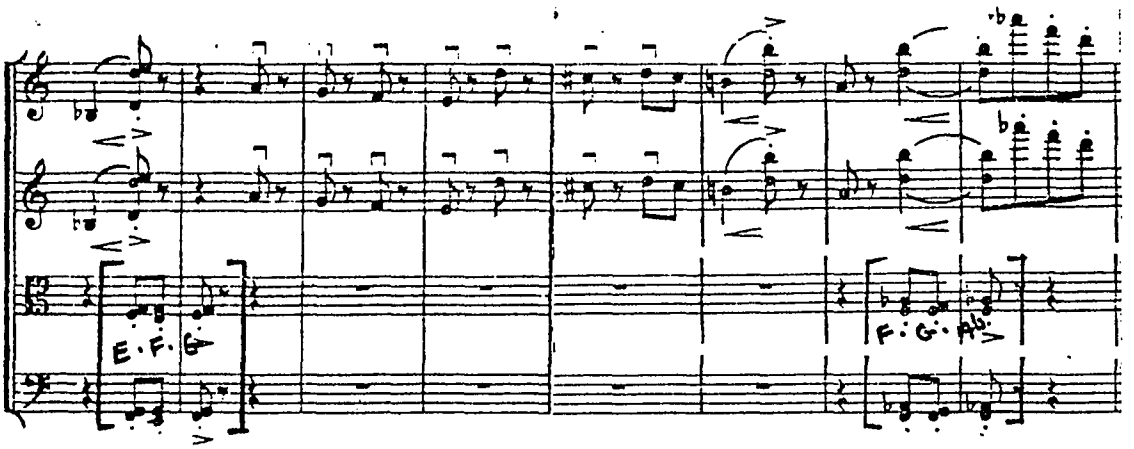
Mvt. 2 (m. 1-5) - the opening measures



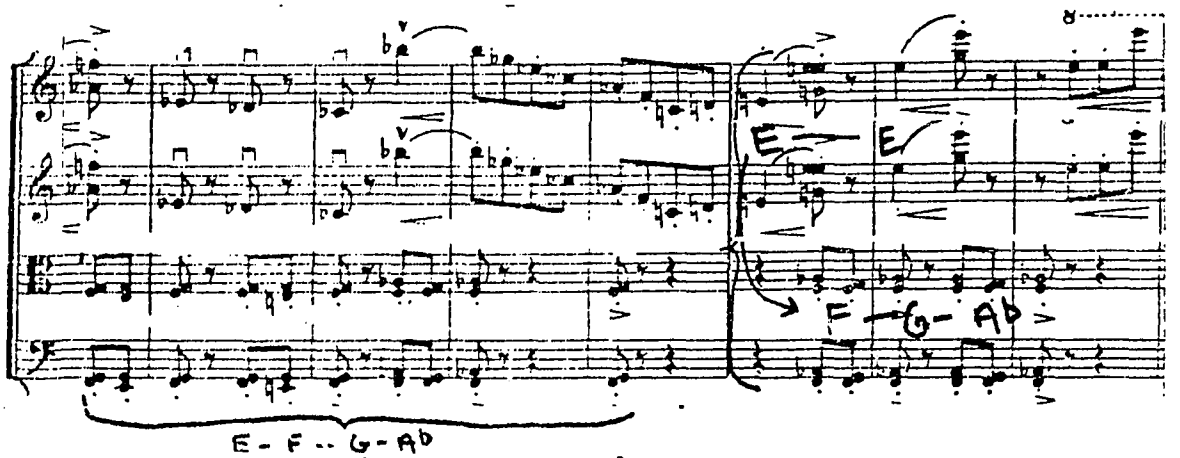
That the origin of the e-f-g in the vertical structures shown above lies in the prominent a^b-e m2/M2/m2 scalar pattern is confirmed at measures 48-55 and 74-81 as shown in the excerpts below.

Ex. 7:52 continued

Mvt. 2 (m. 48-55) - the first recurrence of theme Ia



Mvt. 2 (m. 74-81) - the closing measures of thematic area I

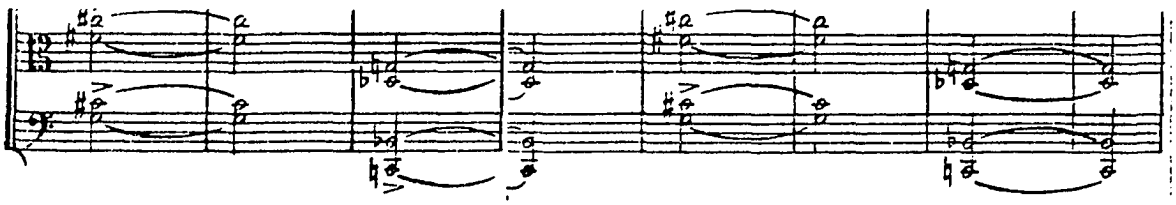


At measures 74-77 the e-f-g-a^{b} occur at a closer temporal span than in the previous excerpt. At measures 79-81 the f-g-a^{b} pattern of the vertical structures in the viola and cello is completed by the e in the first and second violin. Thus the e-f-g which began at measures 1-4 and the f-g-a^{b} pattern of measures 54-55 merge at measures 74-81 as e-f-g-a^{b}, the most prominent pitch frame for the m2/M2/m2 patterns of movements two and three.

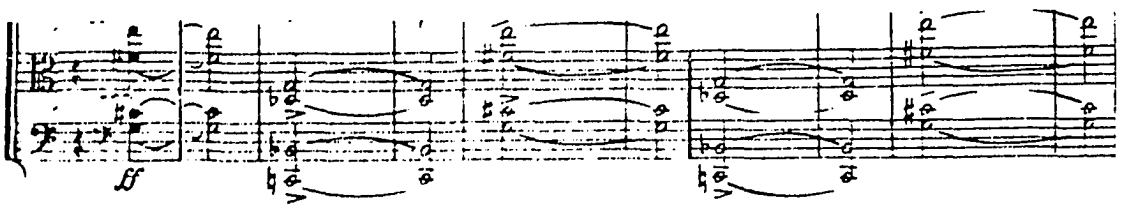
In movement two from measure 216 to the end of the movement a number of vertical structures are presented by double-stops in viola and cello at measures 216, 247, 305 and by the first and second violin at measure 319. The origin of these structures appears to lie in the prominent alternating scalar pattern. In these vertical structures as shown in example 7:53 the following pitches are observed: g-c#-f#-c-b^{b}-d^{b} from measures 216-223, g-c#-f#-e-c-b^{b}-d^{b} from measures 247-256, g-c#-f#-c-b^{b}-d^{b}-e from measures 305-311, and c-f#-g-c#-a-b^{b} from measures 319-335. An arrangement of these pitches from c (the lowest pitch appearing among the structures) into a scalar pattern yields a scale of alternating half-steps and whole-steps: c-c#-(d#)-e-f#-g-a-b^{b}-c. The d# is the only pitch from the scale which remains unused.

Ex. 7:53

Mvt. 2 (m. 216-223)

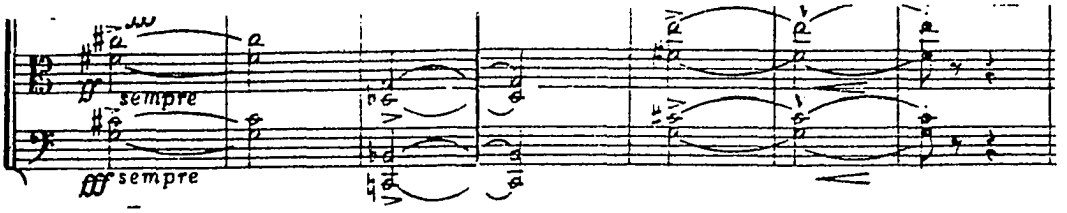


Mvt. 2 (m. 247-256)

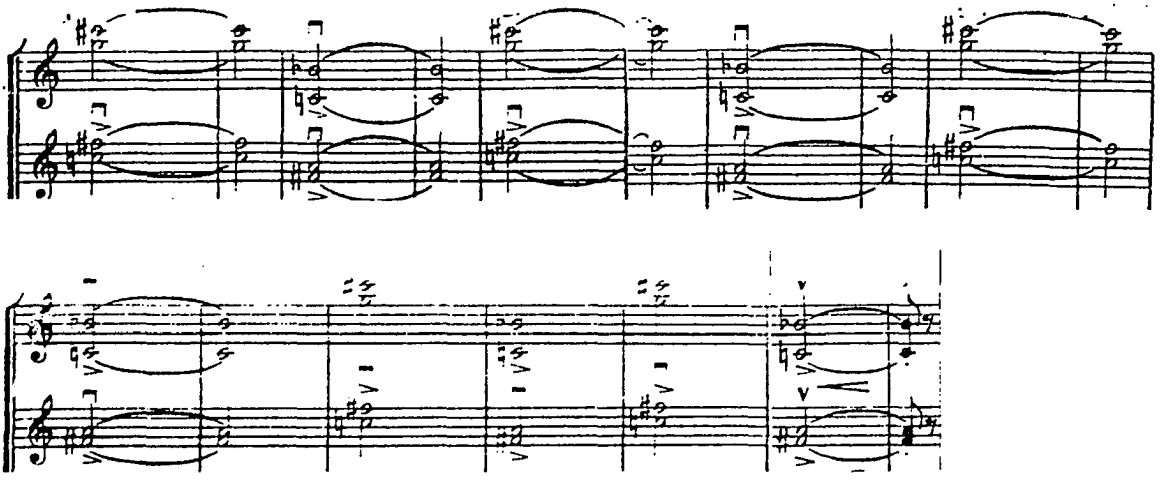


Ex. 7:53

Mvt. 2 (m. 305-311)



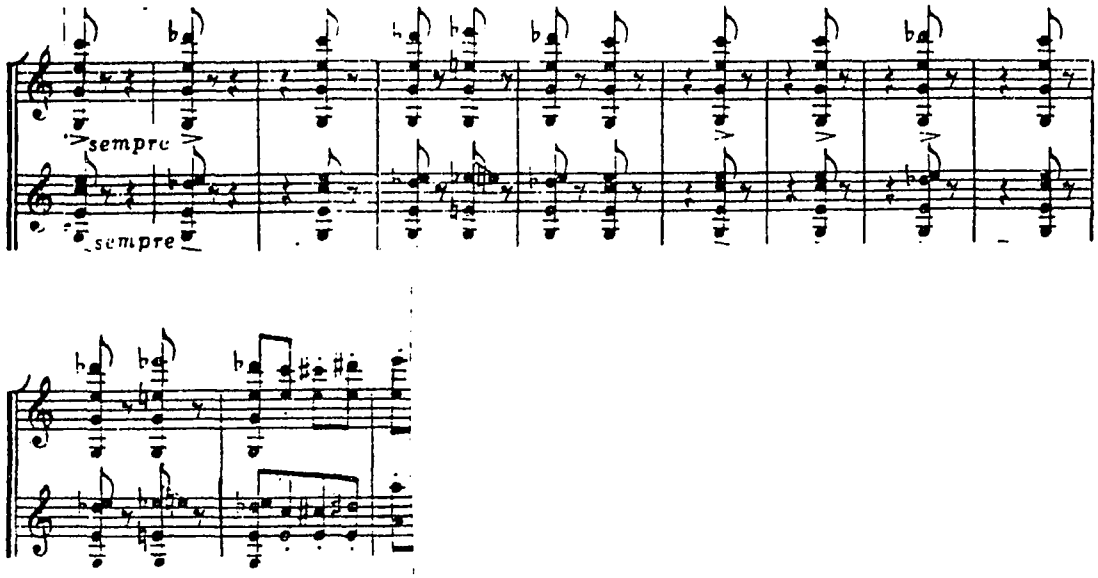
Mvt. 2 (m. 319-334)



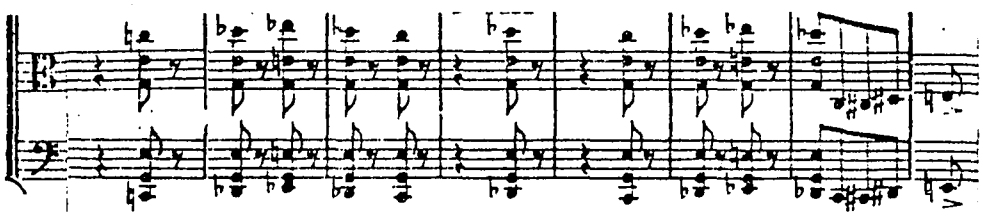
Example 7:54 shows the multiple stops in the first and second violin at measures 294-305 and their recurrence in viola and cello at measures 312-319. When $\underline{d^{b}}$ and $\underline{e^{b}}$ in these vertical structures are spelled enharmonically as c# and d# it is observed that these structures are accommodated within the alternating scalar pattern described in the preceding paragraph. That the present vertical structures may also be described as a g-e double pedal with linear material describing c-d^{b}-e^{b}-e does not alter the fact of their m2/M2/m2 scalar influence.

Ex. 7:54

Mvt. 2 (m. 294-305)



Mvt. 2 (m. 312-319)

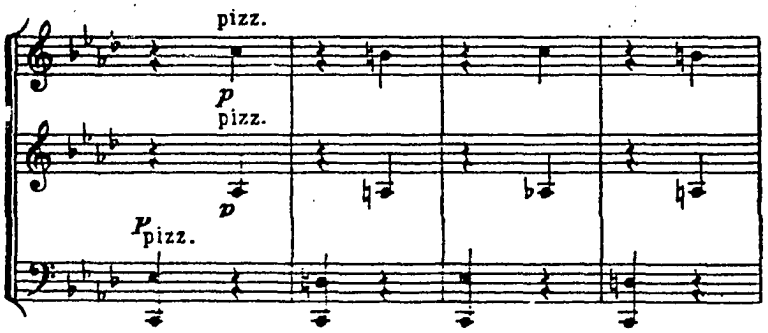


During the detailed analysis of the linear material of movement two it was discovered that the prominent m2/M2/m2 scalar pattern played an increasingly conspicuous role. Examples 7:52, 7:53, and 7:54 detail the use of this pattern in the vertical structures of movement two. It may now be stated that from about measure 247 to the end of movement two both the linear material and the vertical structures are almost totally dominated by the m2/M2/m2 pattern.

Example 7:55 documents vertical structures in movement four which suggest an influence of the m2/M2/m2 scalar pattern.

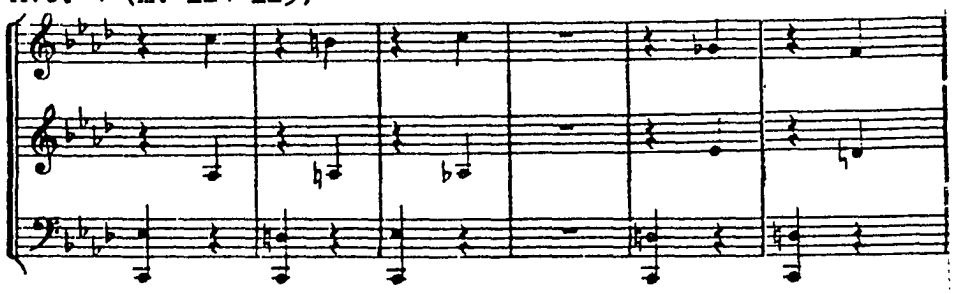
Ex. 7:55

Mvt. 4 (m. 115-118)



When the a^b-a-b-c in the first and second violin are added to the c-e^b and c-d of the cello an alternating pattern is created: a^b-a-b-c-d-e^b.

Mvt. 4 (m. 124-129)



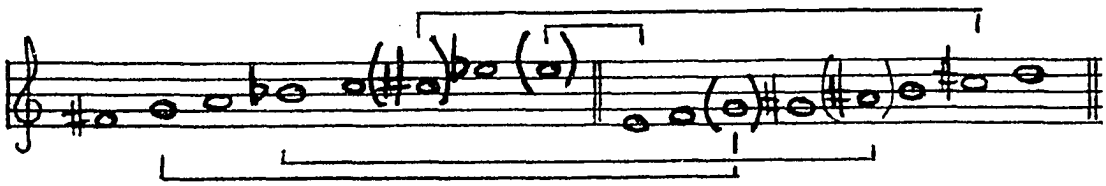
The pattern of the previous excerpt recurs at measures 124-126 and is extended at measures 128-129 where f and g^b are added to create an octave of the alternating pattern: a^b-a-b-c-d-e^b-f-g^b.

At measures 318-333 of movement four a group of vertical structures, formed by double-stops in the viola and cello, appear to be constructed from two different scalar patterns of alternating half-steps and whole-steps.

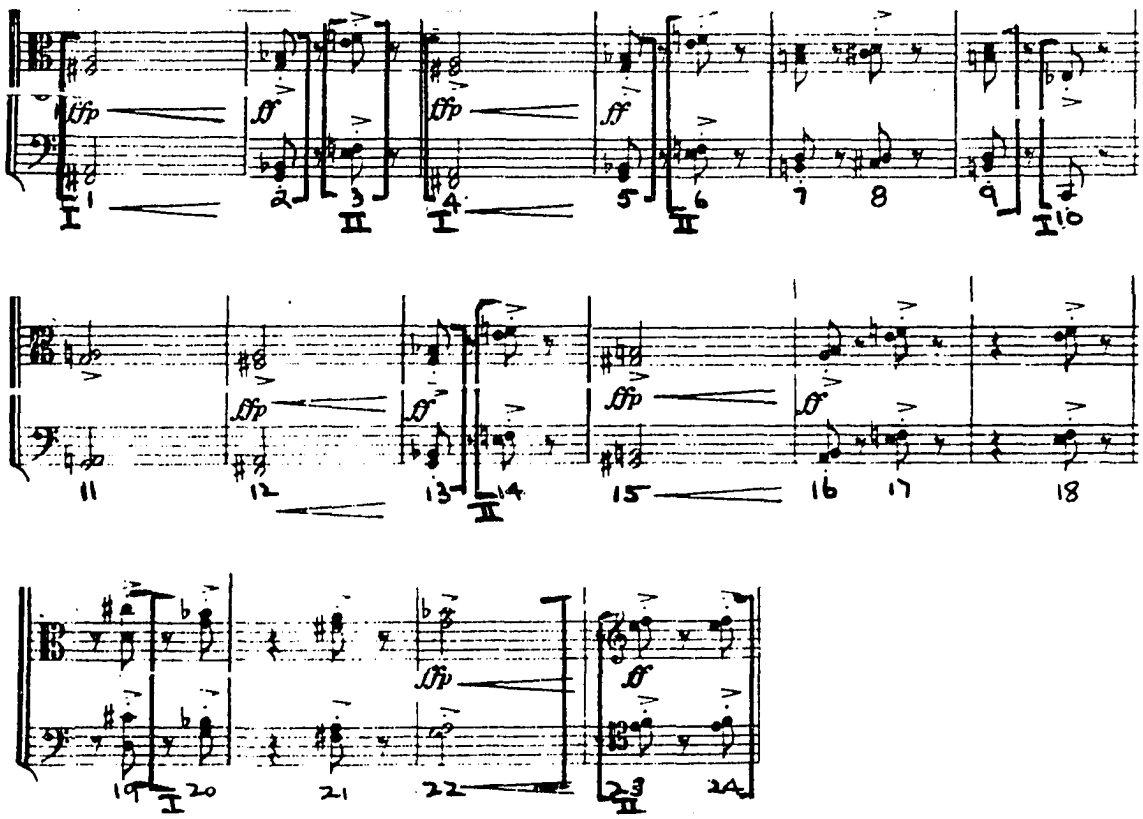
The two scalar patterns and the vertical structures of measures 318-333 are shown in example 7:56; the vertical structures are numbered consecutively to facilitate this discussion. All of the vertical structures in these measures are exclusively the property of one scale pattern or the other except for structure number sixteen.

Ex. 7:56

Scale I Scale II



Mvt. 4 (m. 318-333) - development



Structures one and two show use of four pitches from scale pattern I: f#-g-a-b^b; structures four and five are the same as one and two. Structure ten shows use of the pitches c and e^b while structures eleven, twelve, and thirteen again show f#-g-a-b^b as do structures twenty through twenty-two. From these structures just described the first scale of alternating half-steps and whole-steps emerges: f#-g-a-b^b-c-(c#)-e^b-(e); the c# and e are not used in these structures.

The remaining structures (noted as II in example 7:56) yield a second alternating scale: e-f-(g)-g#-(a#)-b-c#-d; the g and a# are not used. The four unused pitches (two from each scale: c#, e, g, and a#) are the only ones common to both scales. Although the c# and e are not used in the vertical structures based on scale I, they do occur in the structures based on scale II. Likewise the g and a# which are not used in the vertical structures based on scale II do occur in the structures based on scale I. In this manner all twelve tones of the chromatic scale are present within these structures without duplication of pitches between hexachords. The net effect is the same as division of the chromatic scale into assymetrical hexachords: f#-g-a-b^b-c-e^b and e-f-g#-b-c#-d. This procedure marks a definate increase in chromatic influence. The one problem with the hexachord analysis is that the a in vertical structure sixteen must be noted as out-of-place: the pitches used in structures fourteen through nineteen all belong to the second hexachord and a belongs to the first hexachord.

Chapter 8

SUMMARY AND CONCLUSIONS

From among the later quartets of Shostakovich the quartets seven through ten were selected for this study due partly to the comparatively close temporal span of their dates of composition: 1960-1964. This closeness of composition dates suggested a preoccupation on the composer's part with the problems of the string quartet genre. Several writers suggested that one such problem was a preoccupation with motivic unity.

A preliminary investigation strengthened this writer's conviction that these four quartets were worthy of detailed study and that recurring motives and themes were an important means to structural unity in these compositions. Furthermore, not only did there seem to be a preoccupation with motivic manipulation to the point of its elevation as an important stylistic trait, but certain changes in the composer's manner of solving the problems of unity among linear materials also suggested themselves.

By placement of its primary emphasis upon the recurrence of prominent motives and themes this in-depth investigation has not only confirmed the pre-investigatory speculations but has also yielded information concerning the extent, the nature, and the techniques of motivic

unity in these compositions of the composer's maturity. Furthermore, not only have unifying factors been discovered between and among movements of the individual quartets, but such strong similarities exist among prominent motives as to suggest a cross-pollination of motives among the four quartets.

A growing subtlety in the application of recurrence techniques was noted; concerning recurrence techniques within individual quartets the following observations were made.

1. While the movements of the seventh quartet share recurring motives and themes, transformation is most prominently featured as applied to themes.

2. The movements of the eighth quartet are inexorably bound together by the D-S-C-H (d-e^b-c-b) signature motive. While recurrences of themes do contribute to structural unity in this quartet, variation and transformation of the D-S-C-H motive must be considered the primary source of unity among the linear materials.

3. Although recurrences of themes do contribute to structural unity within the movements of the ninth quartet, linear material shared among the movements is limited to variation and transformation of motives. Many of the techniques of motivic manipulation are more subtle than those observed in quartets seven and eight.

4. In the tenth quartet recurrences of themes and motives contribute to structural unity both within and among the movements. Transformation of themes is of minimal importance; however, the techniques of motivic manipulation are applied with consummate mastery. The influence of the opening motive upon structural unity is both subtle and far-reaching.

The analytical approach in this study was both aural and visual; an effort was made to correlate the effect and in some instances the uniqueness of a particular aural impression by tracing its heredity. Aural analysis served both as initial guide and as arbiter when the eye was confronted with difficult decisions. Since music is an aural art this writer subscribes to the postulate that a given composition does not contain more than meets the ear. At the same time it is understood that the more familiar an individual becomes with a particular style, composer, or composition the more educated the ear becomes to the subtleties contained therein. This analysis has sought to discover what relationships exist between and among the several musical events and thereby to shed light upon why the ear was moved to ready acceptance of seemingly unrelated musical events.

Summary of Unifying Factors Among Motives and Themes of the Selected Quartets

This study has shown that motivic unity is an integral part of the compositional processes in these quartets and that it is operative at all architectonic levels. Several themes of each of the four quartets have been observed to grow by means of manipulation of a single motive. It is a tribute to the composer's creative genius that such economy at no time results in monotony of contour or in strangulation of the growth process.

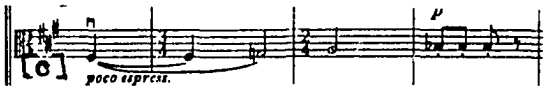
Intermittent recurrence of the original form of a motive or motives has been observed within a thematic area, between and among thematic areas, and between and among movements and is a characteristic of all four quartets.

The last movement of the seventh quartet contains only one new prominent motive; the remainder of the linear material is derived from previous contours (see especially example 4:19, pp. 77-78). In the last two movements of the eighth quartet there is not a single new prominent motive (see especially example 5:25, pp. 157-158). Owing perhaps in part to its large proportions, adherence to this extreme economy of linear material is somewhat relaxed in the ninth quartet. Even here, however, the two most prominent motives of the last movement emerge from prominent contours of the preceding four movements (see especially example 6:22, pp. 248-250 and example 6:23, pp. 250-252). The four most prominent motives of the last movement of the tenth quartet also emerge from prominent contours of the preceding movements (see especially example 7:25, pp. 372-373 and example 7:26, p. 375).

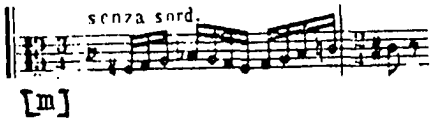
A number of interesting similarities may be extracted from among the prominent motives of the several quartets. The more unique and structurally important examples of what might be called cross-pollination are displayed in examples 8:1, 8:2, 8:3, and 8:4.

Ex. 8:1

Quartet No. 7, opus 108
Mvt. 1 (m. 17-20)

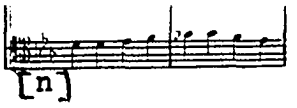


Quartet No. 7, opus 108
Mvt. 3 (m. 12-13)

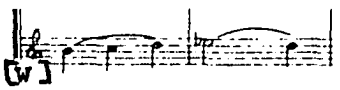


Quartet No. 8, opus 110
Mvt. 2 (m. 80-81)

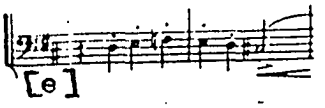
Quartet No. 8, opus 110
Mvt. 2 (m. 289-290)



Quartet No. 8, opus 110
Mvt. 3 (m. 157-158)

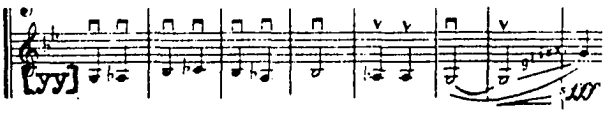


Quartet No. 9, opus 117
Mvt. 1 (m. 47-48)

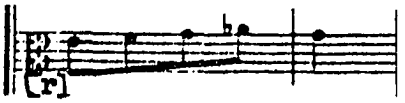


Quartet No. 9, opus 117
Mvt. 1 (m. 51)

Quartet No. 9, opus 117
Mvt. 5 (m. 176-183)



Quartet No. 10, opus 118
Mvt. 2 (m. 134)



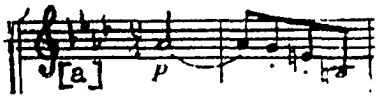
Quartet No. 10, opus 118
Mvt. 3 (m. 1-2)

The above motives are outstanding among the numerous similar motives which display an ascending alternating scalar pattern.

Ex. 8:2

Quartet No. 8, opus 110
Mvt. 1 (m. 19-20)

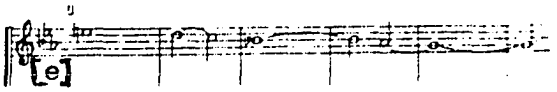
Quartet No. 10, opus 118
Mvt. 1 (m. 1-2)



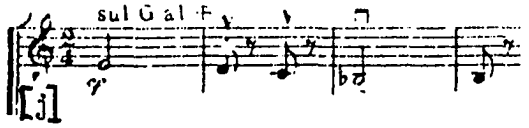
Except for expansion of its second interval, motive [a] of the tenth quartet is a variant of [b] of the eighth quartet achieved by diminution.

Ex. 8:3

Quartet No. 8, opus 110
Mvt. 1 (m. 55-60)



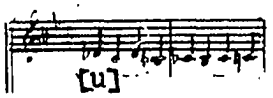
Quartet No. 10, opus 118
Mvt. 2 (m. 1-2)



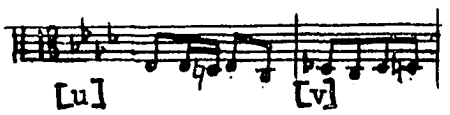
Motive [j] of the tenth quartet and [e] of the eighth are related by their descending whole-tone contour; the former is but a shortening of the e-g pitch frame of the latter presented in diminution.

Ex. 8:4

Quartet No. 9, opus 117
Mvt. 4 (m. 5-6)



Quartet No. 10, opus 118
Mvt. 4 (m. 1-2)



Motives [u] and [v] of the tenth quartet are but a diminution of [u] of the ninth quartet.

In addition to the above quite unique and specific similarities the prominent motives of the quartets share a number of general characteristics, characteristics which would rightly come under the heading of style. Certainly one of the most consistently observed of the general characteristics of these motives is their brevity. So short have the multitude been that the longer motives have called attention to themselves as unique due simply to their temporal length. In all instances the primary factor in this length has been a show tempo and/or long note values rather than a greater number of notes.

Alternating scalar patterns have been identified as prominent throughout these compositions. It would be expected that these patterns present a fairly high profile among the motives. Actually, less than half of the 100 prominent motives of the four quartets show an influence of alternating patterns. Forty-two out of 100 would appear to be a disappointing statistic. However, careful investigation has revealed that in this case the statistic is somewhat misleading, for a number of motives which show alternating pattern influence maintain a high aural impact within their environment. This high aural impact is more often than not achieved by recurrence.

Five of the 100 prominent motives subscribe to a range of more than an octave while seventy-three have a range of a perfect fifth or smaller; the remaining twenty-two fall within the range of a minor sixth to a perfect octave. Approximately two-thirds of the 100 motives are either totally or basically conjunct. Narrow range and conjunct motion may thus be identified as style characteristics of the prominent motives.

TABLE 1

A COMPARISON OF THE RANGES OF THE PROMINENT MOTIVES OF THE FOUR QUARTETS

Quartet	total no. of motives	P5 or less	m6	M6	m7	M7	P8	total no. m6 to P8	m9	M9	larger
No. 7 opus 108	15	11	2	-	1	-	-	3	-	1	-
No. 8 opus 110	25	18	3	3	1	-	-	7	-	-	-
No. 9 opus 117	30	20	1	1	3	1	2	8	-	-	2
No. 10 opus 118	30	24	-	2	2	-	-	4	-	-	2

TABLE 2

A COMPARISON OF CONJUNCT VERSUS DISJUNCT MOTION WITHIN THE PROMINENT MOTIVES OF THE FOUR QUARTETS

Quartet	total no. of motives	totally conjunct	basically conjunct	total	totally disjunct	basically disjunct	total	even conjunct & disjunct
No. 7 opus 108	15	8	3	11	1	3	4	-
No. 8 opus 110	25	8	8	16	-	2	2	7
No. 9 opus 117	30	10	4	14	3	6	9	7
No. 10 opus 118	30	13	10	23	1	6	7	-

Table 1 shows that one-third of the motives of the ninth quartet have a range of more than a perfect fifth. At the same time nine of these motives with ranges which are larger than a perfect fifth are categorized in Table 2 as either totally or basically disjunct. Therefore a larger proportion of the motives of the ninth quartet tend to have a wider range and more disjunct motion than do the motives of the remaining three quartets. This tendency of the motives of the ninth quartet toward wider range and more disjunct motion may be added to the tritone cited in chapter six as major contributors to the different sound of the linear materials of the ninth quartet.

Throughout these quartets there is a notable economy of means used in the construction of themes. Growth of a theme from one and in some instances two motives has been noted as a style characteristic in forty of the sixty themes identified in the thematic indices. Eight of the nine prominent themes of the seventh quartet are constructed from only one or two motives while approximately two-thirds of the prominent themes of quartets eight and ten are in this category. Here again is a contributing factor to the different sound of the ninth quartet for less than half of its themes (9 of 19 themes) are constructed with only one or two motives.

In addition to the characteristic economy of means noted among many of the prominent themes, their initial statements share a similar timbre and texture. Initial statement of all themes of quartets seven, eight, and nine, and ten of the fourteen themes of the tenth quartet are presented either unaccompanied or with only the most minimal

accompaniment. The initial statements of thirty-nine of the sixty prominent themes are heard in violin timbre.

The Processes of Anticipation and Emergence

Anticipation has been defined by this study as a preparatory process which generally takes place immediately before or in close proximity to a coming musical event and which looks forward to one or more parameters of that event. Anticipation is most often operative at a low architectonic level. Emergence has been defined as a metamorphic process during which a certain musical event grows in aural impact until it rises to claim primary aural attention. The event is generally structurally significant at its point of high aural impact and its growth process may be viewed in retrospect as having pervaded throughout a composition or at the very least to be operative in non-adjacent movements.

The detailed analysis has highlighted a number of anticipatory functions in all four quartets; the most interesting of these are documented in the several chapters under the heading The Processes of Anticipation and Emergence. Each of the quartets possesses at least one outstanding example of the process of emergence. The detailed analysis has shown this metamorphic process at work as a prominent motive or theme of a later movement was observed to gradually take shape and assume a position of increasing aural prominence during the course of an earlier movement or movements.

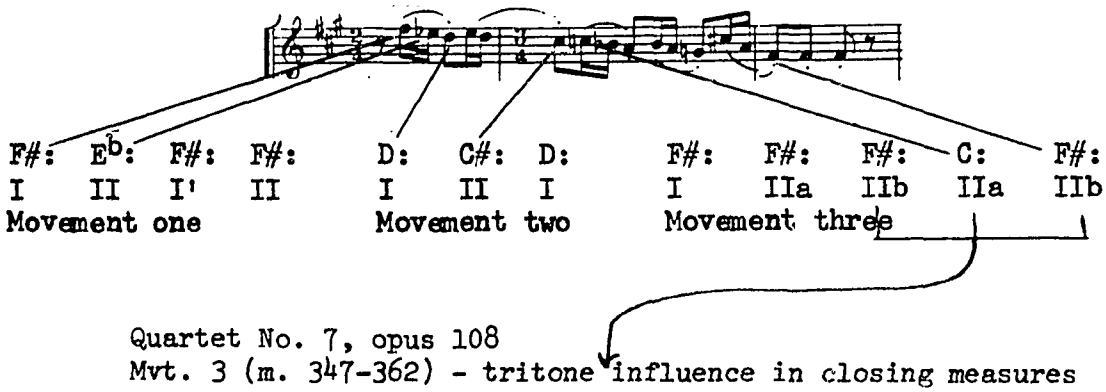
The emergence process was first observed as operational in the seventh quartet where it prepared the sound of the fugue theme of the third movement (see example 4:19, p. 77). In the eighth quartet this process prepared the sound of motive [y] of the fugue theme of movement five (see example 5:25, p. 157). This process was observed in the ninth quartet as it prepared the sounds of motive [t] of movement four (see example 6:38, p. 290) and motives [w] and [x] and subsequently the fugue theme of movement five (see examples 6:22, p. 248 and 6:23, p. 250). In the tenth quartet emergence prepared the sounds of motive [s] of the passacaglia theme of movement three (see example 7:9, p. 335) and motives [u] and [v] of movement four (see example 7:26, p. 372).

Non-linear Relationships

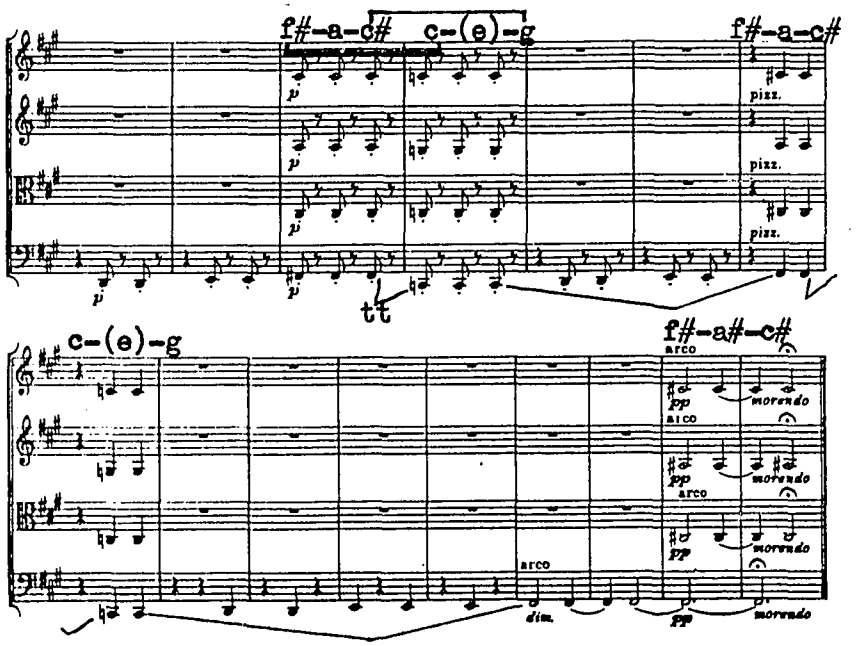
Among the most interesting non-linear relationships which have emerged from this study are those observed between the initial aural stimulii of quartets seven and ten and their respective prominent tonal centers. As shown in example 8:5 the prominent tonal centers of the three movements of the seventh quartet clearly outline the first five pitches of theme Ia of movement one. The conspicuous f#-c tritone in the bass line of the closing measures of both movements one and three also finds expression in the prominent tonal centers of movement three.

Ex. 8:5

Quartet No. 7, opus 108
Mvt. 1 (m. 1-3)



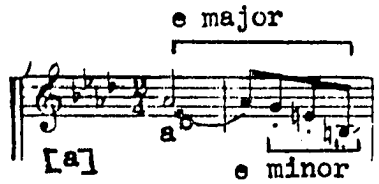
Quartet No. 7, opus 108
Mvt. 3 (m. 347-362) - tritone influence in closing measures



Example 8:6 shows that the a^{b}-e pitch frame of the prominent tonal centers of the four movements of the tenth quartet descends from the first aural stimulus of movement one.

Ex. 8:6

Quartet No. 10, opus 118
Mvt. 1 (m. 1-2)



Mvt. 1 - A^b: Mvt. 2 - E: Mvt. 3 - E: Mvt. 4 - A^b:

The influence of the alternating scalar pattern on the prominent tonal centers of the movements of quartets eight and nine is detailed in examples 8:7 and 8:8.

Ex. 8:7

Quartet No. 8, opus 110 - prominent tonal centers

Mvt. 1 -	A	B	C	B'	A'	Mvt. 2 -	I	II	I'	II'
	C:	C:	C:	A:	C:		G#:	C:	G#:	C:

Mvt. 3 -	I	II	I
	G: and C:	E:	G: and C:

Mvt. 4 -	A	B	C	Coda	Mvt. 5 - Fugue
	C#:	C#:	F#:	C#:	C:

Except for the G# tonal center of thematic area I of movement two all prominent tonal centers are accommodated within an alternating scale constructed from the C tonal center of movements one and five: c-c#-(d#)-e-f#-g-a-(b^b).

Ex. 8:8

Quartet No. 9, opus 117 - prominent tonal centers

Mvt. 1 -	Ia	Ib	Ia	II	Ia'	II'	Ib'	Coda
	E^b:	C:	E^b:	B:	E^b:	E^b: / F:	F:	E^b:
Mvt. 2 -	A	B	A'					
	F#:	B:	F#:					
Mvt. 3 -	I	II	III	II	Ia	Ia'		
	F#:	D:	A:	D:	C:	F#:		
Mvt. 4 -	I	I'	II	I				
	E^b:	E^b:	E^b:	E^b:				
Mvt. 5 -	I	IIa	IIb	IIa	I'	IIb'	IIa'	Coda
	E^b:	B^b:	E:	B^b:	E^b:	E:	B^b:	E^b:

> The prominent tonal centers suggest the use of two different alternating patterns constructed from the quartet's E^b tonal center: movements one through four are accommodated within the pattern e^b-f-f#-(g#)-a-b-c-d while movement five is accommodated within the pattern e^b-e-(f#-g-a)-b^b-(c-d^b).

The alternating scale is a prominent influence in so many motives and themes that it seemed only logical to investigate its possible impact upon the vertical structures of the several quartets. Although the compositional processes in these compositions are primarily linear, a number of instances of alternating patterns in the construction of vertical structures were observed. The number of these structures is not overwhelming. However, the fact that they occur most often in conjunction with an alternating linear pattern makes them appear quite deliberate on the composers' part. Documentation of these vertical structures is shown as follows: (1) quartet seven on pages 92-95, (2) quartet eight on pages 183-186, (3) quartet nine on pages 301-305, and (4) quartet ten on pages 430-437.

Influence of the individual pitches or intervals of motives upon the initial pitches of sequence construction or imitation was not observed to be a prominent characteristic of these compositions.

Varied Versus Non-Varied Recurrence

Attention has been called to an increasing subtlety in the recurrence techniques displayed by these quartets. Table 3 shows the rounded percentages of varied versus non-varied recurrence. As will be noted the percentage of non-varied recurrence declines for each succeeding quartet whereas the percentage of varied recurrence rises.

TABLE 3

NON-VARIED VERSUS VARIED RECURRENCES IN THE FOUR QUARTETS

Quartet	% non-varied recurrence including seq. and transposition	% varied recurrence including mod. seq. and transformation
Quartet No. 7, opus 108	55%	45%
Quartet No. 8, opus 110	43%	57%
Quartet No. 9, opus 117	38%	62%
Quartet No. 10, opus 118	32%	68%

Suggestions for Further Study

This investigation suggests that any number of topics for further study exist among the quartets of Shostakovich. Quartets eleven and twelve have been available for some time, thirteen has been published recently and fourteen should be available soon. Death has brought the composer's work to a close; it is now possible to investigate the last four quartets for further developments in the composer's mature quartet style without fear of future changes in that style.

A study of quartets eleven through fourteen could be undertaken to ascertain whether the composer continued and possibly expanded upon the techniques of linear unity observed in quartets seven through ten or whether he changed direction, sought new paths, became intrigued with other problems. It might also be beneficial if linear studies were undertaken on the first six quartets so that with completion of such studies on the totality, observations concerning the composer's growth and maturation within the quartet genre could be synthesized.

The process of transformation as observed in this study is an important means to the growth of the structure at all architectonic levels. A study of the transformation of motives and themes undertaken among the fourteen quartets could yield detailed information concerning the evolution of the composer's approach to the process of transformation within the quartet genre.

The processes of anticipation and emergence have been observed in this study as making important contributions to structural unity within the selected quartets. The emergence process has been particularly fascinating to observe; a study of the remainder of the quartets

might be undertaken to disclose the extent to which the emergence process is operational as a stylistic trait of the composer's compositional processes as observed in the genre. Another worthy study could result from a detailed investigation of the remainder of the quartets to discover to what extent their opening motive or motives contribute to growth and/or unity of the ensuing structure.

The related literature has suggested that fugal texture and the passacaglia variations are favorites of Shostakovich and that one or both occur in every quartet. In this study prominent fugal textures were observed in the last movements of quartets seven, eight, and nine while movement three of the tenth quartet is a passacaglia variation. Furthermore, the emergence process is operational in the metamorphosis of the prominent linear materials of the several fugue themes and the passacaglia theme. A study of the remainder of the quartets could be undertaken to determine to what extent these observations are true of the fourteen quartets as a whole.

The alternating scalar pattern has emerged from this study as a prominent stylistic trait of these selected quartets. Research could be undertaken to discover the extent and nature of alternating patterns in the remaining quartets. When such a study is undertaken it should involve the quartets as a whole and might investigate the alternating pattern as a possible influence of the Russian folk song idiom.

Finally, there are several studies of a slightly more peripheral nature to the present investigation which are nevertheless closely related to it. This writer's own preliminary investigation suggested that an interesting and rewarding study of the composer's approach to

sonata form could be developed through detailed study of the many sonata-type movements among the quartets. Of the quartets one through twelve, all except numbers eight and eleven have at least one sonata-type structure among their movements. All of the movements of the fifth quartet are sonata-type structures. A detailed study of contrapuntal techniques among the developmental areas and/or fugal textures of the sonata-type structures could answer unjustified criticism on the part of some writers concerning the composer's contrapuntal skills.

An interesting study could also result from an investigation of the composer's exploitation of a wide variety of coloristic possibilities available among the four instruments. In addition to the observed preoccupation with motivic unity, the later quartets especially suggest a fascination with timbre. The early quartets should not be excluded from such a study for there is some evidence to suggest that the composer found a challenge in the coloristic possibilities of the genre from the beginning.

Even in the consciousness of audiences who have not heard the symphonies of Shostakovich, the publicity and fanfare which accompanied each new release have served to elevate the composer as an important creative talent of the mid-twentieth century. Being a more intimate idiom, the string quartets arrived largely unheralded; without detracting from the symphonies in any way it is stated that investigation of the quartets is overdue.

To synthesize an undercurrent of thought which pervades the related literature touching upon the quartets: the intimate nature of the idiom does not allow for concealment of careless craft neither

is there any refuge for emotional hide-and-seek; it may be that future studies will discover that the true historical significance of Shostakovich lies within this genre and that it is here that the magnitude of his gifts will find their truest evaluation.

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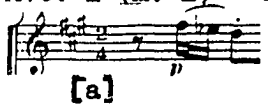
APPENDIX

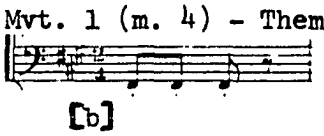
MOTIVE INDEX

Quartet No. 7 in F# Minor, Opus 108

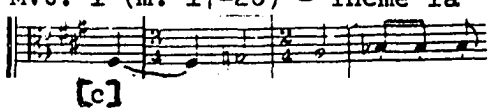
Mvt. 1 (m. 1) - Theme Ia



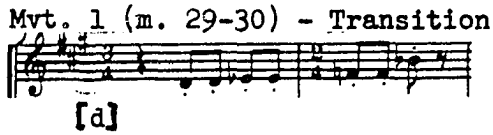
Mvt. 1 (m. 4) - Theme Ib



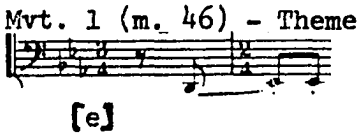
Mvt. 1 (m. 17-20) - Theme Ia



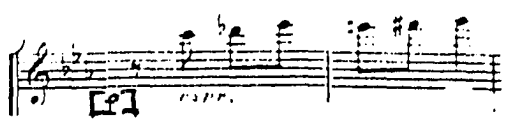
Mvt. 1 (m. 29-30) - Transition



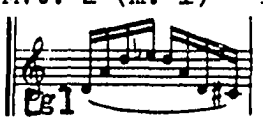
Mvt. 1 (m. 46) - Theme IIa



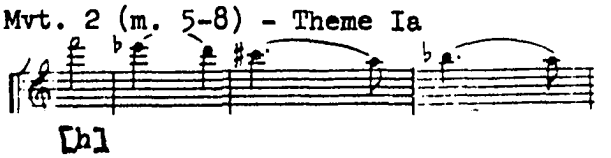
Mvt. 1 (m. 68-69) - Theme IIa



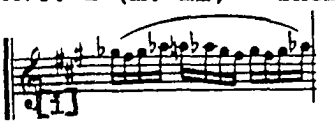
Mvt. 2 (m. 1) - Theme Ia



Mvt. 2 (m. 5-8) - Theme Ia



Mvt. 2 (m. 11) - Theme Ia



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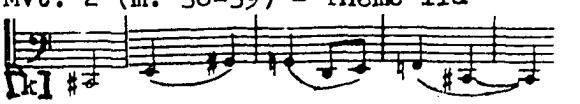
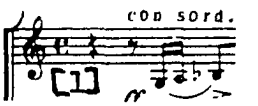
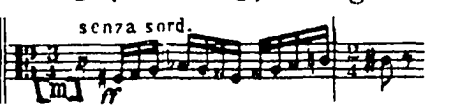
Mvt. 2 (m. 36-39) - Theme IIa



Mvt. 3 (m. 1) - Introduction

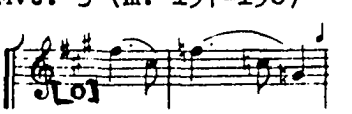


Mvt. 3 (m. 12-13) - Fugue Theme, Ia



Mvt. 3 (m. 15-16) - Fugue Theme, Ia

Mvt. 3 (m. 197-198) - Theme IIa



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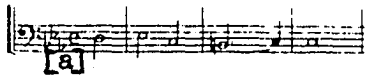
Quartet No. 8 in C Minor, Opus 110

Mvt. 1 (m. 1-4) - Theme A



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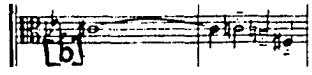
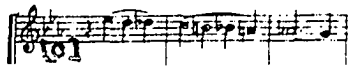


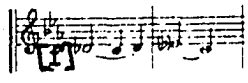
Mvt. 1 (m. 28-30) - Theme B



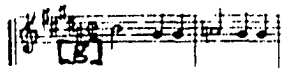
Mvt. 1 (m. 50-51) - Theme C

Mvt. 1 (m. 55-60) - Theme C

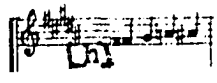
Mvt. 1 (m. 59-60) - Theme C



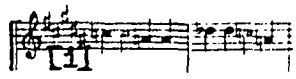
Mvt. 2 (m. 1-2) - Theme Ia



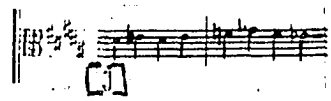
Mvt. 2 (m. 5) - Theme Ia



Mvt. 2 (m. 21-22) - Theme Ib



Mvt. 2 (m. 80-81) - Theme Ia'



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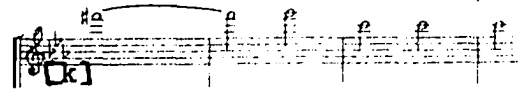
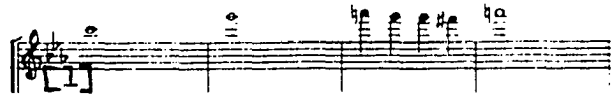


Mvt. 2 (m. 134-137) - Theme II



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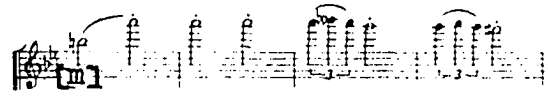
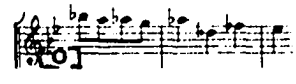


Mvt. 2 (m. 289-290) - Transition

Mvt. 3 (m. 4-5) - Introduction



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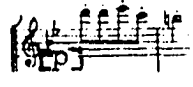

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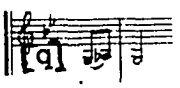
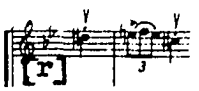
Quartet No. 8 in C Minor, Opus 110

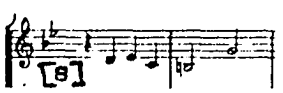
Mvt. 3 (m. 64-65) - Theme Ib



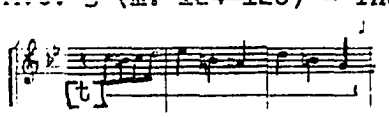
Mvt. 3 (m. 70-71) - Theme Ib



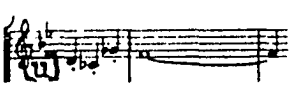
Mvt. 3 (m. 120-121) - Theme Ic



Mvt. 3 (m. 124-126) - Theme Ic

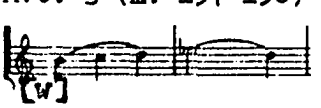


Mvt. 3 (m. 140-141) - Transition

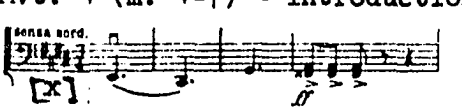


Mvt. 3 (m. 153-154) - Theme IIa

Mvt. 3 (m. 157-158) - Theme IIa



Mvt. 4 (m. 4-7) - Introduction



Mvt. 5 (m. 8-9) - Counter-Subject

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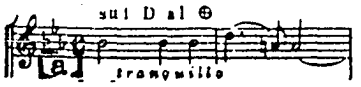
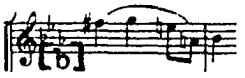
Quartet No. 9 in E^{b} Major, Opus 117

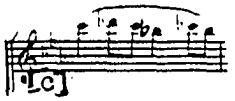
Mvt. 1 (m. 3-4) - Theme Ia



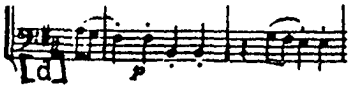
Mvt. 1 (m. 8) - Theme Ia



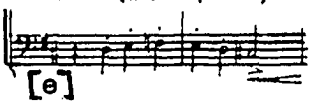
Mvt. 1 (m. 27) - Theme Ib



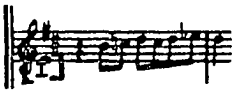
Mvt. 1 (m. 45-46) - Theme IIa



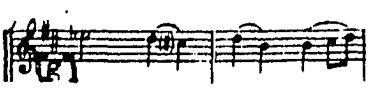
Mvt. 1 (m. 47-48) - Theme IIa



Mvt. 1 (m. 51) - Theme IIa

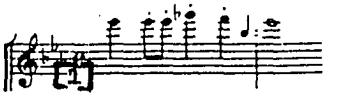


Mvt. 1 (m. 71-72) - Theme IIb



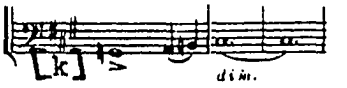
Mvt. 1 (m. 91-92) - Retransition

Mvt. 1 (m. 93-94) - Retransition

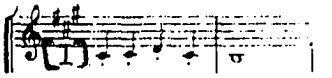


Mvt. 2 (m. 1-4) - Theme A

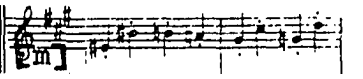
Mvt. 2 (m. 6-8) - Theme A



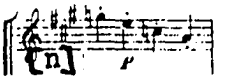
Mvt. 3 (m. 1-2) - Theme I



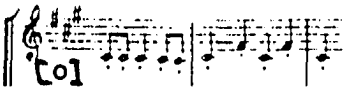
Mvt. 3 (m. 7-8) - Theme I



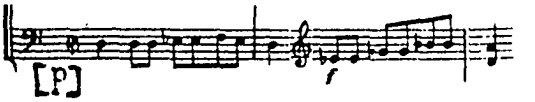
Mvt. 3 (m. 11) - Theme I



Mvt. 3 (m. 16-17) - Theme I



Mvt. 3 (m. 61-62) - Theme II



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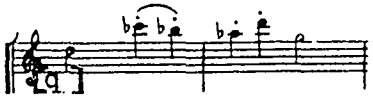
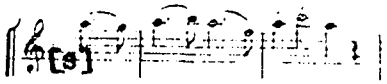
Mvt. 3 (m. 65-66) - Theme II

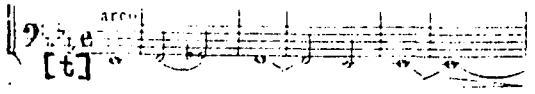


Mvt. 3 (m. 139-140) - Theme IIIa

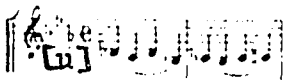
Mvt. 3 (m. 145-146) - Theme IIIa



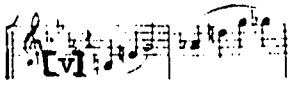
Mvt. 4 (m. 1-6) - Theme Ia



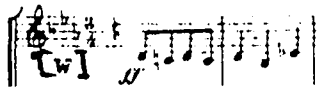
Mvt. 4 (m. 5-6) - Theme Ia



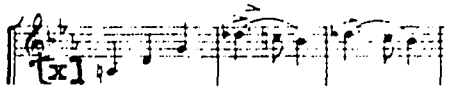
Mvt. 4 (m. 20-21) - Theme Ib



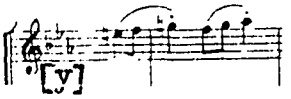
Mvt. 5 (m. 1-2) - Theme Ia



Mvt. 5 (m. 7-9) - Theme Ia

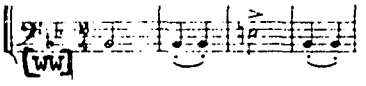


Mvt. 5 (m. 34) - Theme Ib

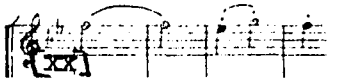


Mvt. 5 (m. 93) - Theme Ic

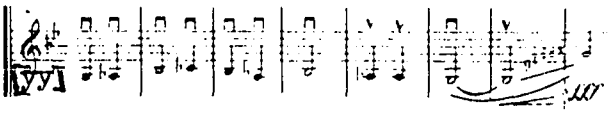
Mvt. 5 (m. 152-155) - Theme IIa



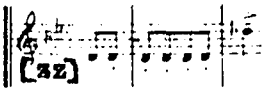
Mvt. 5 (m. 159-162) - Theme IIa



Mvt. 5 (m. 176-182) - Theme IIa



Mvt. 5 (m. 209-210) - Theme IIb



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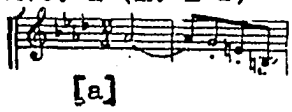
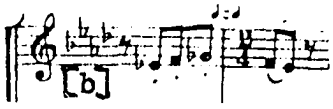
Quartet No. 10 in A♭ Major, Opus 118

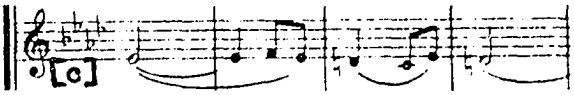
Mvt. 1 (m. 1-2) - Theme Ia



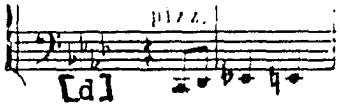
Mvt. 1 (m. 11-12) - Theme Ia



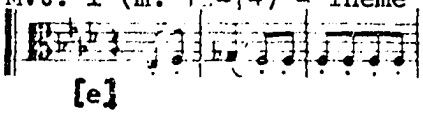
Mvt. 1 (m. 22-25) - Theme Ib



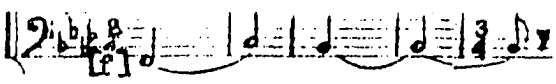
Mvt. 1 (m. 37-38) - Theme Ia'



Mvt. 1 (m. 7[illegible]-74) - Theme IIa

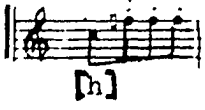


Mvt. 1 (m. 78-82) - Theme IIa

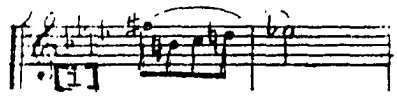


Mvt. 1 (m. 111-112) - Theme IIIa

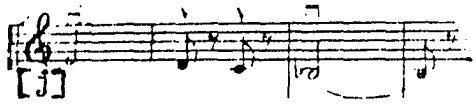
Mvt. 1 (m. 113) - Theme IIIa



Mvt. 1 (m. 122-123) - Theme IIIa



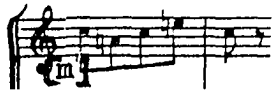
Mvt. 2 (m. 1-3) - Theme Ia



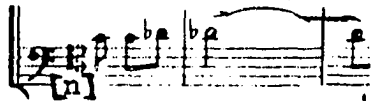
Mvt. 2 (m. 15-16) - Theme Ia

Mvt. 2 (m. 30-31) - Theme Ib

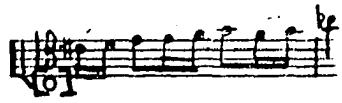
Mvt. 2 (m. 32) - Theme Ib



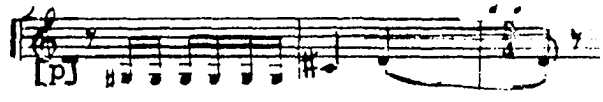
Mvt. 2 (m. 82-83) - Theme IIa



Mvt. 2 (m. 95) - Theme IIa



Mvt. 2 (m. 102-103) - Theme IIb



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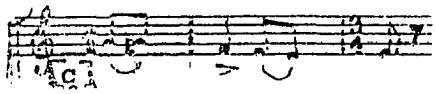
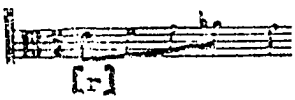
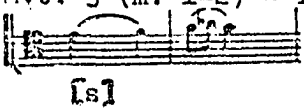
Mvt. 2 (m. 113-114) - Theme IIb



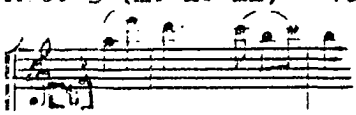
Mvt. 2 (m. 134) - Theme IIb



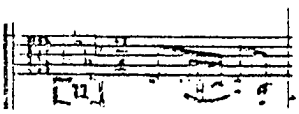
Mvt. 3 (m. 1-2) - Theme I



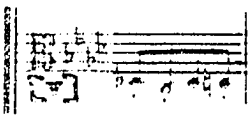
Mvt. 3 (m. 10-11) - Variation I



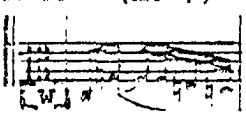
Mvt. 4 (m. 1) - Theme Ia



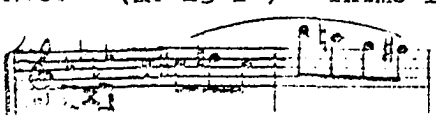
Mvt. 4 (m. 2) - Theme Ia



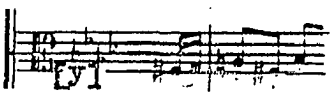
Mvt. 4 (m. 7) - Theme Ia



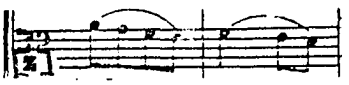
Mvt. 4 (m. 23-24) - Theme Ib



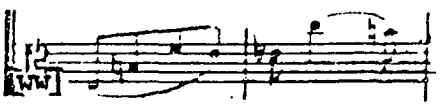
Mvt. 4 (m. 27) - Theme Ib



Mvt. 4 (m. 64-65) - Theme IIa

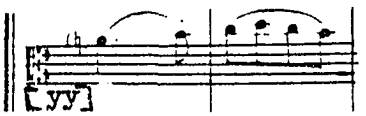


Mvt. 4 (m. 70-71) - Theme IIa



Mvt. 4 (m. 79) - Theme IIa

Mvt. 4 (m. 82-83) - Theme IIb



Mvt. 4 (m. 143-146) - Theme III